



**Outline Construction & Demolition
Waste Management Plan**

Project:
**Carlisle Residential
Development, Kimmage Road
West, Kimmage, Dublin 12**

Job No.
21.221

DOCUMENT CONTROL

Project: Carlisle Residential Development, Kimmage Road West, Kimmage, Dublin 12

Project No: 21.221

Document Title: Outline Construction & Demolition Waste Management Plan

Document No. 21.221-RP-22

DOCUMENT STATUS

Issue	Date	Description	Orig.	PE	Issue Check
PL1	28.03.2023	Issued for Planning	IM	MS	Michael Hughes
PL2	23.05.2023	Issued for Planning	MS	MS	Michael Hughes

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1. INTRODUCTION & PURPOSE OF REPORT

An LRD Planning permission is being sought by '1 Terenure Land Ltd', for a proposed Large Scale residential development at Carlisle Site, Kimmage Road, Kimmage, Dublin 12.

In order to optimize the effectiveness of waste management, it is recognized that the formulation of an outline Construction & Demolition Waste Management Plan (CDWMP) should start at the earliest possible stage of a project. Formal production and presentation of the CDWMP will occur at a later stage in the development process, but a clear "waste management philosophy" needs to be adopted by the designers / developers at the initial planning stages of the project and to be documented for subsequent inclusion within the formal CDWMP.

Therefore, this outline CDWMP provides an overview of what is expected in terms of dealing with waste generated during constructions phases of the proposed project. As the subject site is currently greenfield no demolition works are required. This CDWMP is considered a live document which will be adopted, amended, and updated as necessary by the Main Contractor. The Main Contractor is ultimately responsible for management of the waste arising during the project.

The primary purpose of the CDWMP is to demonstrate how the management of waste produced on site may be carried out and how it should be in accordance with all current legislation and industry standards, in particular the Waste Management Act 1996-2021 and the associated North East Region Waste Management Act.

The key principals of this legislation as well as the related European and national waste policies relevant to proposed construction are summarized as follows:

- Prevention and minimisation of waste is the preferred option;
- Where construction waste is generated it should be source separated to facilitate recycling and reuse, and maximise diversion of waste from landfill.
- Where waste may not be prevented or recycled it should be transported and disposed of in accordance with applicable legislation and without causing environmental pollution; and
- Waste may only be transferred by a waste collection permit holder and delivered to an authorised waste facility.

This report contains:

- A list of certain legislation, policy and guidance documents relevant to sustainable waste management in construction.
- An overview of the project site and opportunities for waste minimise minimisation and re-use.
- Envisaged categories of waste and their approximate quantities that will be produced during construction.
- An outline methodology for waste management at the site.

2. RELEVANT LEGISLATION, POLICY AND GUIDANCE DOCUMENTS

Construction waste is defined as waste which arises from construction and renovation activities, together with all waste categories mentioned in chapter 17 of the European Waste Catalogue

(EWC). Also included within the definition are surplus and damaged products and materials arising in the course of construction work or used temporarily during the course of on-site activities.

The recycling of construction waste is essential in order to reduce our dependency on finite natural resources such as geological and energy reserves. While recycling of such material has the added benefit of controlling the extent of waste disposal and reducing overall transportation costs, prevention is the most desirable approach to waste management, since the elimination of waste removes the need for subsequent handling, transportation and treatment of discarded materials.

The Waste Management Acts (WMA) 1996 to 2021 and associated regulations create a "cradle to grave" responsibility for the management of waste.

It is proposed that all waste minimisation, management and disposal measures related to the proposed development will be carried out using best practice and in conformance with the requirements of the relevant authorities. The key legislation, policies and guidance documents are listed below. The Contractor shall familiarise themselves with these documents (and all current versions of legislation in affect at a given time) to aid the preparation of the detailed waste management plan.

2.1 LEGISLATION

2.1.1 European Legislation

- Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Text with EEA relevance)

2.1.2 National Legislation

- Waste Management Acts, 1996 to 2008, as amended and Regulations Made under the Acts
- Waste Management (Collection Permit) Regulations, 2007, S.I. No 820 of 2008, as amended
- Waste Management (Shipments of Waste) Regulations 2007, S.I. No. 419 of 2007
- European Communities (Waste Directive) Regulations 2011, S.I. No.0126 of 2011

2.1.3 Regional Legislation

- Dublin City Council Waster Management (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws 2018.

2.2 POLICY

2.2.1 European Policy

- Circular Economy Package, European Commission (2018)
- Europe 2020 Strategy, European Commission (2010)
- Roadmap to a Resource Efficient Europe, European Commission (2011)
- 7th Environmental Action Programme, European Commission (2014)
- European Commission Circular Economy Strategy (2018; 2015)

2.2.2 National Policy

- Department of the Environment and Local Government (1998). 'Waste Management - Changing Our Ways' – A Policy Statement.
- Department of the Environment and Local Government (2002). Preventing and Recycling Waste – Delivering Change – A Policy Statement.
- Department of the Environment, Heritage and Local Government (2004). Waste Management - Taking Stock and Moving Forward.
- Department of the Environment, Heritage and Local Government (2006). National Strategy on Biodegradable Waste Management.
- Department of the Environment, Heritage and Local Government (2012). A Resource Opportunity- Waste Management Policy in Ireland.
- EPA National Waste Statistics and Bulletins
- EPA (2014) National Municipal Waste Recovery Capacity. An Assessment for the Department of the Environment, Community and Local Government
- Environmental Protection Agency (2014) National Hazardous Waste Management Plan, 2014-2020
- EPA (2015) Waste Classification – List of Waste and Determining if Waste is hazardous or Non-Hazardous.

2.2.3 Regional Policy

- The Eastern Midlands Region Waste Management Plan (2015-2021)

2.3 GUIDANCE DOCUMENTS

- Construction and Demolition Waste Management – A Handbook for Contractors & Site Managers, FÁS and CIF (2002)
- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition Projects – DoEHLG 2006

3. PROJECT OVERVIEW

3.1 SITE DETAILS

The site consists of approximately 1.25ha net site area and is bounded by residential dwellings to the north, east and west with Ben Dunne gym to the southwest. The site is currently greenfield. Refer Figure 3.1 for a satellite view of the site.



Figure 3.1: Site Location

3.2 PROPOSED DEVELOPMENT

The proposed Large Scale Residential Development will consist of 145 no. apartments (70 no. 1 bed and 75 no. 2 bed apartments) within 5 no. blocks (with blocks 4 and 5 linked throughout), ranging in height up to 5 storeys.

All residential units have associated private balconies/terraces to the north/ south/ east/ west elevations. The proposal will also include provision of a creche, cultural/ community space along with 89 no. car parking spaces, 465 no. bicycle parking spaces and 6 no. motorcycle parking spaces located at undercroft and surface level. Vehicular/pedestrian/cyclist access is provided off Kimmage Road West via the existing road which currently serves the Ben Dunne Gym.

All associated site development works, public open spaces, podium and ground level communal open space, landscaping, boundary treatments, plant and waste management areas, and services provision (including ESB substations) will be provided. Upgrades to the Uisce Eireann network along Kimmage Road West are also accommodated.

4. KEY ROLES AND RESPONSIBILITIES

4.1 CONSTRUCTION WASTE MANAGER

A construction waste manager shall be nominated / appointed by the Main Contractor prior to commence of the works to ensure that waste prevention, minimisation, recycling and any unavoidable disposal are managed appropriately. Their main tasks should be;

- To implement all items set out above effectively and to keep accurate records of the waste generated, and the cost associated with waste generation and management.
- Document each consignment of construction waste, including;
 - type of material being transported,
 - quantity of material,
 - name and permit number of waste collection contractor (note, contractors must hold a valid permit issued by the National Waste Collection Permit Office - NWCPO).
 - destination of material and proposed use.
- Produce summary reports for the above, which also include estimates of the quantity of waste that is diverted from landfill.
- Document the extent of re-use, salvage, recycling and solid waste disposal.
- Distinguish reusable materials from materials suitable for recycling.
- Ensure maximum segregation at source.
- Cooperate with site manager on the best locations for stockpiling reusable materials.
- Separate materials for recovery.

The construction waste manager should have the authority to instruct all site personnel to comply with the Waste Management Plan.

At the operational level, sub-contractors shall have an appointed person who has the responsibility to ensure operations in the Waste Management Plan are carried out on an ongoing basis.

4.2 WASTE AUDITING

Regular site audits across the site shall be carried out by the construction waste manager. The audits will comprise a review of all records of waste generated and transported on or off the site. This includes:

- reviewing details of materials arriving on site
- reviewing the amount, nature and composition of waste leaving site.
- calculate the total cost of waste management.
- All areas, and stages of the project should be reviewed to ensure that obvious opportunities for waste reduction are not overlooked.
- Summary of waste arisings should be sent to the environmental authority at the completion of the project.

The audit findings should highlight corrective actions that may be taken in relation to management policies or site practices in order to bring about further waste reductions. The data can be used to assist designers in the reduction of waste on future projects.

A tracking system should be stipulated to determine the success or failure of corrective actions.

4.3 TRAINING

Copies of the CWMP should be made available to all personnel on site. The objectives, procedures and responsibilities of the plan should be outlined to all personnel during the site induction.

The construction waste manager shall conduct toolbox talks with all site operatives regarding the waste management arrangements and procedures on site.

Posters should be displayed on site reinforcing the key messages of the Waste Management Plan.

5. WASTES ARISING AND MANAGEMENT PLAN

The site is currently greenfield which significantly reduces the quantity of waste created by the project. As such waste will arise on the project mainly from waste associated with excavation for new foundations and services, and unavoidable construction waste including material surpluses, damaged materials and packaging waste.

5.1 CONSTRUCTION WASTE CATEGORIES:

The main non-hazardous waste streams are expected to be as set out in Table 5.1 below:

Table 5.1 Typical Waste Types Expected to be Generated

European Waste Code (EWC) / List of Waste Code (LoW)	Waste Material
17 01	Concrete, blocks, tiles, ceramics
17 02	Wood, glass and plastic
17 03	Bituminous mixtures, coal tar and tarred products
17 04	Metals (including their alloys)
17 05	Soil and stones
17 08	Gypsum based construction material
20 01 01	Paper and cardboard
17 09	Mixed C&D waste
20 02 01	Green waste
20 01 35 & 36	Electrical and electronic components
20 01 33 & 34	Batteries and accumulators
13 07	Liquid fuels
20 01 13, 19, 27-30	Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)
17 06	Insulation materials and asbestos-containing construction materials

Notes: If fuel is stored on site for machinery and construction vehicles, then areas around fuel tanks and draw off points will be bunded. If fuel is correctly contained and bunded, then it is not expected that there will be any significant fuel wastage at the site.

5.2 EXCAVATION

It is calculated that there will be c.11,500m³ of spoil removed from site, arising from excavations for foundations, floor slabs, roads and site services excavations. A copy of the site investigation carried out at the site is included in Appendix 1. A summary of the ground conditions encountered is as follows:

- **Topsoil:** encountered across the site with a thickness range of 100-400mm.
- **Made Ground (fill):** reworked sandy gravelly clay fill encountered across the site to a maximum depth of 2.80m in BH05. Fragments of red brick were encountered within the made ground in BH01, CBR02, TP05, TP07 and TP08.
- **Glacial Till:** sandy gravelly clay, frequently with low cobble content, typically firm or stiff in upper horizons, becoming very stiff with increasing depth
- **Bedrock (Limestone):** Weathered limestone was encountered at depths ranging from 2.00m in RC01 to 2.3m in WM01, while competent bedrock was encountered at depths ranging

from 2.9m in RC01 to 12.5m in WM02. Bedrock was not recovered as part of the ground investigation

5.2.1 Disposal of Excavated material

All contracted hauliers and disposal facilities used to dispose of excavation waste from the site must be authorized to dispose of this waste, and all licenses/permits must be valid, and conditions adhered to.

5.3 CONSTRUCTION PHASE

5.3.1 Estimated Quantities

In terms of construction stage waste, the Outline CDWMP for the project proposes a target maximum waste generation for the new construction of $<7.5\text{m}^3$ (6.5tonnes) per 100sq.m Gross Internal Floor Area. The proposed floor area of new buildings is c.20,000m² – therefore this equates to a target maximum waste generation of c.1500m³ or c.1725tonnes for the new build aspect of the project.

5.3.2 Construction Waste Management

Appropriate measures should be taken to ensure excess waste is not generated during construction, including;

- Ordering of materials should be on an 'as needed' basis to prevent over supply to site. Co-ordination is required with suppliers enabling them to take/buy back surplus stock.
- Purchase of materials pre-cut to length to avoid excess scrap waste generated on site.
- Ensuring correct storage and handling of goods to avoid unnecessary damage that would result in their disposal.
- Ensuring correct sequencing of operations.
- Use reclaimed materials in the construction works.
- Materials are segregated at source before removed offsite to a licenced facility.
- Office and food waste on site should be separated.
- Site should be maintained to prevent litter / excess debris throughout the project.
- 'Just on time' delivery should be used so far as is reasonably practicable.
- Hazardous materials such as chemicals and paints should be stored in a secure, bunded location.

5.3.3 Reuse on Site

Concrete and masonry waste should be source segregated separately and disposed of at a remote facility for reprocessing and reuse as aggregate or backfill material if suitable. Timber and scrap metal shall be collected in receptacles with mixed construction waste materials, for subsequent separation and recycling at a remote facility.

Other construction waste materials will be collected in receptacles with mixed construction waste materials, for subsequent separation and disposal at a remote facility.

Hazardous wastes will be identified, removed and kept separate from other construction waste materials in order to avoid contamination.

Contractor's office and canteen waste should be separated into paper/glass/plastic recycling, and removed to an off-site recycling facility. Under no circumstances is the burning of waste material permitted. Packaging waste will be separated into glass, paper, steel, aluminium, fibreboard, wood and plastic sheeting fractions and arrangements be made for it to be collected by a Repak approved waste contractor.

6. CONSTRUCTION WASTE COLLECTION AND DISPOSAL

Waste collectors and disposal facilities must have appropriate permits / licences in accordance with the Waste Management Regulations.

The Contractor will maintain a list of all authorised hauliers and receiving facilities along with copies of their permits. All waste will be documented prior to leaving the site. All information will be entered into a waste management system kept on the site.

7. ESTIMATED COST OF WASTE MANAGEMENT

The cost of waste management should be estimated by the appointed contractor and included for at tender stage. This may include:

- The purchase cost of waste materials.
- Handling costs.
- Storage and transportation costs.
- Disposal costs including landfill tax.

It should then be possible to estimate:

- Total waste concrete management costs.
- Total waste soil management costs.
- Total waste masonry management costs.

This will help ensure that unproductive and avoidable costs of construction waste management are eliminated and will be effective in enhancing internal cost control procedures. The estimate of the cost of waste management should be updated throughout the project at each stage at which a waste audit is carried out.

8. PROPOSED CONTENT FOR CONSTRUCTION STAGE DETAILED CWMP

The detailed Construction Waste Management Plan should be prepared prior to commencement of the works by the Main Contractor, and should address the following aspects of the Project:

- Analysis of the waste arisings/material surpluses;
- Specific waste management objectives for the project (including stating the maximum waste targets per GIA for new buildings)
- Methods proposed for prevention, reuse and recycling of wastes;
- Material handling procedures; and
- Proposals for education of workforce and plan dissemination programme.

The plan should contain the following information as a minimum:

- Details of the Contractor and key personnel.

- Detailed responsibilities of each person involved in waste management, including the C&D waste manager.
- Categories of waste that will be generated and their estimated quantities.
- Types and quantities of excavated materials (soils).
- Estimated quantities of soil for re-use and temporary storage requirements.
- Estimated waste volumes that will require temporary storage on site and its proposed location.
- Measures to reduce waste generation.
- Measures to prevent nuisances including noise, dust or other pollution associated with waste management procedures.
- List of authorised waste collectors / hauliers and their associated licences or permits.
- List of recycling and disposal sites, including copies of permits/licences for waste facilities;
- Procedure for the control of sub-contractors (if applicable) with regards to waste management. This must include an assessment of their policies and control capabilities and the identification and implementation of additional controls needed to fulfil the Contractor's obligations in respect of waste management.
- Procedure for segregation and proper storage of materials on site to facilitate reuse and recycling.
- Procedures for record keeping relating to the handling, transportation and disposal of waste.
- Particular procedures for the management of any hazardous or contaminated waste.
- Procedure for review / auditing of the CWMP to demonstrate successful implementation of the plan.

Appendix 1

Site Investigation Information (Causeway Geotech Report)



CAUSEWAY
— GEOTECH

Carlisle Residential Development – Ground Investigation

Client: Lioncor

Client's Representative: Barrett Mahony Consulting Engineers

Report No.: 21-0968

Date: September 2021

Status: Final for Issue

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Document Control Sheet

Report No.:		21-0968			
Project Title:		Carlisle Residential Development			
Client:		Lioncor			
Client's Representative:		Barrett Mahony Consulting Engineers			
Revision:	A00	Status:	Final for Issue	Issue Date:	1 st October 2021
Prepared by:		Reviewed by:		Approved by:	
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The works were conducted in accordance with:

British Standards Institute (2015) BS 5930:2015+A1:2020, Code of practice for site investigations.

BS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing.

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland

Laboratory testing was conducted in accordance with:

British Standards Institute BS 1377:1990 parts 2, 4, 5, 7 and 9

METHODS OF DESCRIBING SOILS AND ROCKS

Soil and rock descriptions are based on the guidance in BS5930:2015+A1:2020, The Code of Practice for Site Investigation.

Abbreviations used on exploratory hole logs	
U	Nominal 100mm diameter undisturbed open tube sample (thick walled sampler).
UT	Nominal 100mm diameter undisturbed open tube sample (thin walled sampler).
P	Nominal 100mm diameter undisturbed piston sample.
B	Bulk disturbed sample.
LB	Large bulk disturbed sample.
D	Small disturbed sample.
C	Core sub-sample (displayed in the Field Records column on the logs).
L	Liner sample from dynamic sampled borehole.
W	Water sample.
ES / EW	Soil sample for environmental testing / Water sample for environmental testing.
SPT (s)	Standard penetration test using a split spoon sampler (small disturbed sample obtained).
SPT (c)	Standard penetration test using 60 degree solid cone.
(x,x/x,x,x,x)	Blows per increment during the standard penetration test. The initial two values relate to the seating drive (150mm) and the remaining four to the 75mm increments of the test length.
(Y for Z/ Y for Z)	Incomplete standard penetration test where the full test length was not achieved. The blows 'X' represent the total blows for the given seating or test length 'Z' (mm).
N=X	SPT blow count 'N' given by the summation of the blows 'X' required to drive the full test length (300mm).
HVP / HVR	In situ hand vane test result (HVP) and vane test residual result (HVR). Results presented in kPa.
V VR	Shear vane test (borehole). Shear strength stated in kPa. V: undisturbed vane shear strength VR: remoulded vane shear strength
Soil consistency description	In cohesive soils, where samples are disturbed and there are no suitable laboratory tests, N values may be used to indicate consistency on borehole logs – a median relationship of $N \times 5 = C_u$ is used (as set out in Stroud & Butler 1975).
dd-mm-yyyy	Date at the end and start of shifts, shown at the relevant borehole depth. Corresponding casing and water depths shown in the adjacent columns.
▽	Water strike: initial depth of strike.
▼	Water strike: depth water rose to.
Abbreviations relating to rock core – reference Clause 36.4.4 of BS 5930: 2015	
TCR (%)	Total Core Recovery: Ratio of rock/soil core recovered (both solid and non-intact) to the total length of core run.
SCR (%)	Solid Core Recovery: Ratio of solid core to the total length of core run. Solid core has a full diameter, uninterrupted by natural discontinuities, but not necessarily a full circumference and is measured along the core axis between natural fractures.
RQD (%)	Rock Quality Designation: Ratio of total length of solid core pieces greater than 100mm to the total length of core run.
FI	Fracture Index: Number of natural discontinuities per metre over an indicated length of core of similar intensity of fracturing.
NI	Non Intact: Used where the rock material was recovered fragmented, for example as fine to coarse gravel size particles.
AZCL	Assessed zone of core loss: The estimated depth range where core was not recovered.
DIF	Drilling induced fracture: A fracture of non-geological origin brought about by the rock coring.
(xxx/xxx/xxx)	Spacing between discontinuities (minimum/average/maximum) measured in millimetres.

Carlisle Residential Development

1 AUTHORITY

On the instructions of Barrett Mahony Consulting Engineer, (“the Client’s Representative”), acting on the behalf of Lioncor (“the Client”), a ground investigation was undertaken at the above location to provide geotechnical and environmental information for input to the design and construction of a proposed residential development.

This report details the work carried out both on site and in the chemical testing laboratories; it contains a description of the site and the works undertaken, the exploratory hole logs and the laboratory test results. A discussion on the recommendations for construction is also provided.

All information given in this report is based upon the ground conditions encountered during the site investigation works, and on the results of the laboratory and field tests performed. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations, and water conditions between or below exploratory holes. It should be noted that groundwater levels usually vary due to seasonal and/or other effects and may at times differ to those recorded during the investigation. No responsibility can be taken for conditions not encountered through the scope of work commissioned, for example between exploratory hole points, or beneath the termination depths achieved.

This report was prepared by Causeway Geotech Ltd for the use of the Client and the Client’s Representative in response to a particular set of instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded.

2 SCOPE

The extent of the investigation, as instructed by the Client’s Representative, included boreholes, trial pits, soil sampling, environmental sampling, groundwater monitoring, in-situ and laboratory testing, and the preparation of a report on the findings including recommendations for construction.

3 DESCRIPTION OF SITE

As shown on the site location plan in Appendix A, the works were conducted on a greenfield site located in Carlisle, Kimmage Road West, Dublin 12. The site is bounded by Brookfield housing estate to the east, by Ben Dunne Gym to the south, by Park Crescent to the south and by Captain’s Road to the north. The is relatively flat and is comprised entirely of grassland.

4 SITE OPERATIONS

4.1 Summary of site works

Site operations, which were conducted between the 2nd and 22nd September 2021, comprised:

- five boreholes by dynamic (windowless) sampling methods
- five boreholes by rotary drilling methods
- eleven machine dug trial pits
- an infiltration test performed at four locations; and
- plate load tests at three locations.

The exploratory holes and in-situ tests were located as instructed by the Client's Representative, as shown on the exploratory hole location plan in Appendix A.

4.2 Boreholes

A total of ten boreholes were put down in a minimum diameter of 150mm through soils and rock strata to their completion depths by a combination of methods, including light percussion boring using a Dando Terrier rig and rotary drilling by a Comacchio 205 tracked rotary drilling rig.

The borehole logs state the methodology and plant used for each location, as well as the appropriate depth ranges.

A summary of the boreholes, subdivided by category in accordance with the methods employed for their completion, is presented in the following sub-sections.

4.2.1 Dynamic sampled boreholes

Five boreholes (BH01-02) were put down to completion by light percussion boring techniques using a Dando Terrier dynamic sampling rig. The boreholes were put down initially in 150mm diameter, reducing in diameter with depth as required, down to 50mm by use of the smallest sampler.

Hand dug inspection pits were carried out between ground level and 1.20m depth to ensure boreholes were put down clear of services or subsurface obstructions. The boreholes were taken to depths ranging between 1.90m and 3.60m where they were terminated on encountering virtual refusal on obstructions.

Disturbed (bulk and small bag) samples were taken within the encountered strata. Environmental samples were taken at standard intervals, as directed by the Client's Representative.

Standard penetration tests were carried out in accordance with BS EN 22476-3:2005+A1:2011 at standard depth intervals using the split spoon sampler (SPT_(s)) or solid cone attachment (SPT_(c)). The penetrations are stated for those tests for which the full 150mm seating drive or 300mm test drive was not possible. The *N*-values provided on the borehole logs are uncorrected and no allowance has been made for energy ratio corrections. The SPT hammer energy measurement report is provided in Appendix H.

Any water strikes encountered during boring were recorded along with any changes in their levels as the borehole proceeded. Details of the water strikes are presented on the individual borehole logs.

Appendix B presents the borehole logs.

4.2.2 Rotary drilled boreholes

Five boreholes (RC01-RC03 and WM01-WM02) were put to their completion by rotary drilling techniques only. The boreholes were completed using a Comacchio 205 tracked drilling rig.

Symmetrix-cased full hole rotary percussive drilling techniques were employed to advance the boreholes to scheduled depth. SPTs were carried out at standard intervals throughout the overburden in accordance with BS EN 22476-3:2005+A1:2011 at standard depth intervals using the split spoon sampler (SPT_(s)) or solid cone attachment (SPT_(c)). The penetrations are stated for those tests for which the full 150mm seating drive or 300mm test drive was not possible. The *N*-values provided on the borehole logs are uncorrected and no allowance has been made for energy ratio corrections. The SPT hammer energy measurement report is provided in Appendix H.

Appendix B presents the borehole logs.

4.3 Trial Pits

Eight trial pits (TP01-TP08) were excavated using a 13t tracked excavator fitted with a 600mm wide bucket, to a maximum depth of 3.00m.

Environmental samples were taken at standard intervals in each trial pit.

Disturbed (bulk bag) samples were taken at standard depth intervals and at change of strata.

Any water strikes encountered during excavation were recorded along with any changes in their levels as the excavation proceeded. The stability of the trial pit walls was noted on completion.

Appendix C presents the trial pit logs with photographs of the pits and arising provided in Appendix D.

4.4 Plate load tests

Plate load tests were carried out at four locations CBR01 to CBR04 in similarly numbered trial pits. The pits were excavated using a 13t tracked excavator fitted with a 600mm wide bucket, to a maximum depth of 3.00m with tests undertaken at 0.50mbgl.

The plate load tests were conducted as incremental loading tests in accordance with Clause 4.1 of BS1377: Part 9: 1990 (British Standards Institute, 1990). A 450mm diameter bearing plate was used with five equal loadings to a maximum pressure of approximately 500kPa, followed by unloading.

Plate movements were measured using three strain gauges fitted to a remotely fixed tripod frame. Each loading increment was maintained until the plate movement had essentially stopped.

The test results are provided in Appendix E in the form of plots of the plate settlements (average of the three gauges) against pressure.

The Modulus of Subgrade Reaction, k , is estimated by applying a “best fit” to the settlement-pressure plots, and is reported in MPa/m. The numerical value represents the pressure, in kPa, on the bearing plate that induces 1.25mm of settlement.

An approximate CBR value was estimated using the guidance provided in the Interim Advice Note 73/06 (Revision 1, 2009) of the Design Guidance for Road Pavement Foundations (Draft HD25). The document provides methods to convert the measured k value to the equivalent for a 762mm diameter plate and the consequent relationship with CBR. This method of estimating an equivalent CBR value is relatively conservative.

4.5 Infiltration tests

An infiltration/soakaway test was carried out at four locations (IF01-IF04) in accordance with BRE Digest 365 - Soakaways (BRE, 2016). The pits were excavated using a 13t tracked excavator fitted with a 600mm wide bucket, to a depth of 1.50m.

Appendix F presents the results and analysis of the infiltration test.

4.6 Surveying

The as-built exploratory hole positions were surveyed following completion of site operations by a Site Engineer from Causeway Geotech. Surveying was carried out using a Trimble R10 GPS system employing VRS and real time kinetic (RTK) techniques.

The plan coordinates (Irish Transverse Mercator) and ground elevation (mOD Malin) at each location are recorded on the individual exploratory hole logs. The exploratory hole plan presented in Appendix A shows these as-built positions.

4.7 Groundwater monitoring

Following completion of site works, a groundwater data logger was installed in WM01 and WM02 to monitor groundwater levels over a period of time. The loggers were set to record at fifteen-minute intervals.

The results of will be issued once the period of monitoring has ended, in electronic format.

5 LABORATORY WORK

Upon their receipt in the laboratory, all disturbed samples were carefully examined and accurately described, and their descriptions incorporated into the borehole logs.

5.1 Environmental laboratory testing of soils

Environmental testing, was conducted on selected environmental soil samples by Chemtest at its laboratory in Newmarket, Suffolk.

Rilta suite of analysis was carried out on samples for landfill disposal criteria. This included testing for a range of determinants, including:

- Metals
- Speciated total petroleum hydrocarbons (TPH)
- Speciated polycyclic aromatic hydrocarbons (PAH)
- Cyanides
- Asbestos screen
- pH; and
- Waste acceptance criteria (WAC) testing.

Results of environmental laboratory testing are presented in Appendix G.

A waste classification report was compiled analysing the results of the above testing. The report is presented in Appendix I.

6 GROUND CONDITIONS

6.1 General geology of the area

Published geological mapping indicate the superficial deposits underlying the site comprise Glacial Till. These deposits are underlain by limestones and shales of the Lucan Formation.

6.2 Ground types encountered during investigation of the site

A summary of the ground types encountered in the exploratory holes is listed below, in approximate stratigraphic order:

- **Topsoil:** encountered across the site with a thickness range of 100-400mm.
- **Made Ground (fill):** reworked sandy gravelly clay fill encountered across the site to a maximum depth of 2.80m in BH05. Fragments of red brick were encountered within the made ground in BH01, CBR02, TP05, TP07 and TP08.
- **Glacial Till:** sandy gravelly clay, frequently with low cobble content, typically firm or stiff in upper horizons, becoming very stiff with increasing depth.
- **Bedrock (Limestone):** Weathered limestone was encountered at depths ranging from 2.00m in RC01 to 2.3m in WM01, while competent bedrock was encountered at depths ranging from 2.9m in RC01 to 12.5m in WM02. Bedrock was not recovered as part of the ground investigation.

6.3 Groundwater

Details of the individual groundwater strikes, along with any relative changes in levels as works proceeded, are presented on the exploratory hole logs for each location.

Groundwater was encountered during percussion boring, rotary drilling and trial pit excavation at depths as shown in Table 1 below.

Table 1 Groundwater strikes encountered during the ground investigation

GI Ref	Water Level (mbgl)	Comments
BH01	2.90	Slight seepage
BH04	2.60	
BH05	2.80	Seepage at 2.80
CBR01	2.00	Slow seepage at 2.00m
TP01	2.40	Fast seepage at 2.40m
TP04	1.95	Slow seepage at 1.95m
TP06	2.90	Fast seepage at 2.90m
WM02	4.00	

Groundwater was not noted during drilling at any of the other borehole locations. However, it should be noted that the casing used in supporting the borehole walls during drilling may have sealed out any or additional groundwater strikes and the possibility of encountering groundwater during excavation works should not be ruled out.

Seasonal variation in groundwater levels should also be factored into design considerations and continued monitoring of the two installed standpipes will give an indication of the seasonal variation.

7 DISCUSSION

7.1 Proposed construction

It is proposed to construct a residential development on the site.

No further details were available to Causeway Geotech at the time of preparing this report and any designs based on the recommendations or conclusions within this report should be completed in accordance with the current design codes, taking into account the variation and the specific details contained within the exploratory holes. Causeway Geotech were commissioned to provide a geotechnical report, and it is outwith our remit to advise on structure design.

7.2 Recommendations for construction

7.2.1 Summary

Based on the presence of stiff glacial till at relatively shallow depths across the footprint of the proposed building, the implementation of traditional shallow (spread) foundations (strip/pad and trench fill) are considered suitable.

WM02 and RC03 in the east of the site encountered bedrock at deeper depths than the rest of the site (>10mbgl). Depending on the design of the proposed structure in this area shallow foundations may prove problematic, and possibly the most practicable foundation solution in this part of the site involves the transfer of loading to depth by piling.

Should piling be adopted as the preferred foundation type, it is highly recommended that further ground investigation works involving rotary drilling be carried out to prove the depth to bedrock across the eastern edge of the site.

7.2.2 Soil strength parameters

When estimating the shear strength of fine soils (silt/clay), reference is made to the results of Standard Penetration Tests (SPT's) carried out within the boreholes. The undrained shear strength of fine soils can be estimated using the correlation developed by Stroud & Butler:

$$C_u = f_1 \times N$$

where f_1 is typically in the range 4 to 6. A median f_1 value of 5 is adopted for this report.

For granular soils (sand/gravel), a graphical relationship between SPT "N" value and angle of shearing resistance, ϕ , has been developed by Peck, Hanson and Thorburn. This is published in *Foundation Design and Construction* (Tomlinson, 2001) and is referenced in this report when deriving angles of shearing resistance for the gravel soils.

7.2.3 Foundations and ground floor construction

Foundations should transfer loading to below any Made Ground or subsoil. The recommended foundation construction and allowable bearing pressure (ABP) at the borehole locations are presented in Table 1.

Table 1: Construction recommendations

Borehole	Depth below EGL* to suitable bearing stratum	Estimated ABP (kPa)	Strata description	Foundation type	Ground floor construction	Groundwater
BH01	3.00m	250	Weathered bedrock	Trench fill	Suspended	Strike at 2.90m
BH02	1.20m	250	Stiff Glacial Till	Strip & pad	Ground bearing	Not encountered
BH03	1.20m	170	Stiff Glacial Till	Strip & pad	Ground bearing	Not encountered
BH04	3.00m	250	Stiff Glacial Till	Trench fill	Suspended	Strike at 2.60m
BH05	3.00m	250	Stiff Glacial Till	Trench fill	Suspended	Strike at 2.80m
RC01	1.20m	210	Stiff Glacial Till	Strip & pad	Ground bearing	Not encountered
RC02	2.00m	250	Weathered bedrock	Trench fill	Ground bearing	Not encountered

Borehole	Depth below EGL* to suitable bearing stratum	Estimated ABP (kPa)	Strata description	Foundation type	Ground floor construction	Groundwater
RC03	>10.00m	n/a	Stiff Glacial Till	Piled	Suspended	Not encountered
WM01	1.20m	190	Stiff Glacial Till	Strip & pad	Ground bearing	Not encountered
WM02	12.50m	n/a	BEDROCK	Piled	Suspended	Not encountered

*Existing Ground Level

Based on the findings of the site investigation, spread foundations (strip/pad and trench fill) are considered suitable with estimated allowable bearing pressures between 170kPa and 250kPa at depths between 1.20m and 3.00m on stiff glacial till or possible bedrock.

The base of foundation excavations should be thoroughly inspected in accordance with the Earthworks Specification; any soft or loose soils should be removed with the resultant void backfilled with ST1 concrete or engineered backfill. A consistent bearing stratum should be provided for any building unit to limit differential settlements.

Given the generally fine grained/cohesive nature of the soils throughout the proposed formation levels, excavations for foundations are likely to be relatively stable. However, any instability can be minimised by battering the side slopes at 2 vertical to 1 horizontal and by limiting the duration that the excavation is open. Groundwater control, where required, will be possible by pumping from sumps formed in the base of excavations.

RC03 and WM02 encountered bedrock at depths of >10m, which marks a big drop off from the rest of the site. It is not unusual for rockhead to vary in depth across short depths due to weathering effects or other geological features such as karst features, faults or old river channels. However, the area of Kimmage is noted for historic quarries, with one noted 450m to the west, to a depth of 11-12m and 750m to the northeast to a depth of 12m. Generally, with infilled quarries the backfilled material will consist of very soft/very loose material which would not have been engineered given the era it was excavated in, however the material encountered in RC03 and WM02 appears to consist of stiff to very stiff sandy gravelly clay, typical of glacial till. The driller also noted no anthropogenic material during drilling of the boreholes apart from the upper 1-2m, however given the nature of the drilling process, which provides no recovery, it would be hard to tell from drilling flush returns if any man-made material was present.

Given the findings of the boreholes in the east of the site, it cannot be confirmed whether the area is an old, infilled quarry, therefore it is recommended that a deep foundation method be utilised in this area to transfer any loadings to bedrock. Dependant on the design of the building and structural loads associated with same, piles may acquire sufficient shaft and base resistance with the stiff to very stiff clay encountered at shallower depths than provided in Table 1, however a specialist piling contractor should be consulted prior to commencing to design process.

Driven piles are the preferred pile type – of precast concrete or steel/ductile iron. The piles should be driven to a predetermined set – each pile will, therefore, be effectively proof tested by the installation method.

If the surrounding land use precludes the use of hard drive piles, due to environmental restrictions with respect to noise and vibration, low vibration driven piles, continuous flight auger (CFA) or continuous helical displacement (CHD) piles will be required.

Piles will end bear on limestone bedrock, however design dependant they may acquire sufficient shaft and base resistance from the stiff to very stiff clay.

Where site levels are to be raised, piles should be designed to resist additional loading that will arise due to negative skin friction along the pile length passing through Made Ground and soft soils.

The detailed design of piles should be undertaken in conjunction with specialist piling contractors. Their proposals should include the means to verify that the required load capacity has been achieved: for example, dynamic pile tests and/or static load tests.

Where pile foundation solution is adopted, floor slabs should be supported by ground beams spanning between piles caps supported by piles.

7.2.4 Floor slabs

Floor slabs should not bear directly onto Made Ground or soft soils. Consequently, the use of ground bearing floor slabs is considered appropriate following the removal of any surface Made Ground and soft clay layers and their replacement using well-graded well-compacted granular fill. However, a suspended floor slab should be adopted where the difference in levels of the proposed floor and the base of Made Ground/soft soils is greater than 600mm.

Therefore, given the depth to the base of Made Ground and relative low strength of upper soil layers, a suspended floor slab may be required over parts of the site. The use of intermediate lines of support stub walls would reduce the spans required for flooring units.

7.2.5 Excavations for services

For the installation of services ducts/trenches, it is suggested that open trenching will be the most practicable construction method. Generally speaking, the ground conditions should render the use of open trenching by backhoe excavator possible, with some trench support required should any granular stratum be encountered during excavations.

Where working in open trenches, it is thought that trench support systems, by way of a trench box (or possibly sheet piles), will be required to maintain trench stability and safe working conditions. Groundwater control at these locations should be possible by means of sump pumping.

To preclude the eventuality of differential settlements in pipes, they should be laid on a consistent stratum of appropriate allowable bearing capacity and protected with appropriate fill cover.

Where ducts and chambers must be installed in areas where localised soft spots are encountered, the use of geogrid reinforcement along the base of the excavation is recommended. This will stiffen the base of the trench and help control longitudinal differential settlement.

Backfilling of trenches may be completed by using compacted Cl 804 granular fill and reinstated as appropriate.

7.2.6 Rock excavatability

Rotary drilling established the depth to rockhead, as summarised below in Table 2.

Table 2: Depth to rockhead

Exploratory location	hole	Weathered Rock depth (mbgl)	Competent Rock Depth (mbgl)
RC01		2.00	2.90
RC02		2.00	2.40
RC03		Not encountered	
WM01		2.30	3.00
WM02		12.50	12.50

As shown above, depth to competent rockhead is typically 2.00-3.00m in the western part of the site (west of CBR03). There are no basements planned as part of the development, however, the possibility of encountering weathered bedrock/competent bedrock locally at depths shallower than indicated in Table 2 should not be ruled out.

Based on the trial pits terminating once encountering weathered bedrock was encountered using a 13t excavator, it is likely that any weathered bedrock encountered should be able to be excavated by hard digging, with competent bedrock being excavated by localised rock breaking, using a large excavator than used during the trial pits.

Where hydraulic breaking of rock is required, a plan for control of noise and vibration should be produced in advance of construction activities. This should outline the extent and type of monitoring required for the duration of site works, as well as the requirement for respite periods to punctuate breaking activities.

7.2.7 Access roads, car parks and hard standing

Based on a summary of the CBR tests undertaken at the site, it is envisaged that the upper strata on site would be suitable for the placement of road make up layers. Areas tested indicated CBR values ranging from 7-12% at a depth of 0.50mbgl, although it should be noted that some tests were undertaken within made ground, which is not ideal for placement of road layers, as it could lead to differential settlement.

Table 2.1 of volume 7 section2 of the Design Manual for Roads and Bridges (below), gives guidance on the average thickness of the pavement layers in relation to the CBR results. As can be seen, a CBR in excess of 7% requires a 340mm thick capping layer.

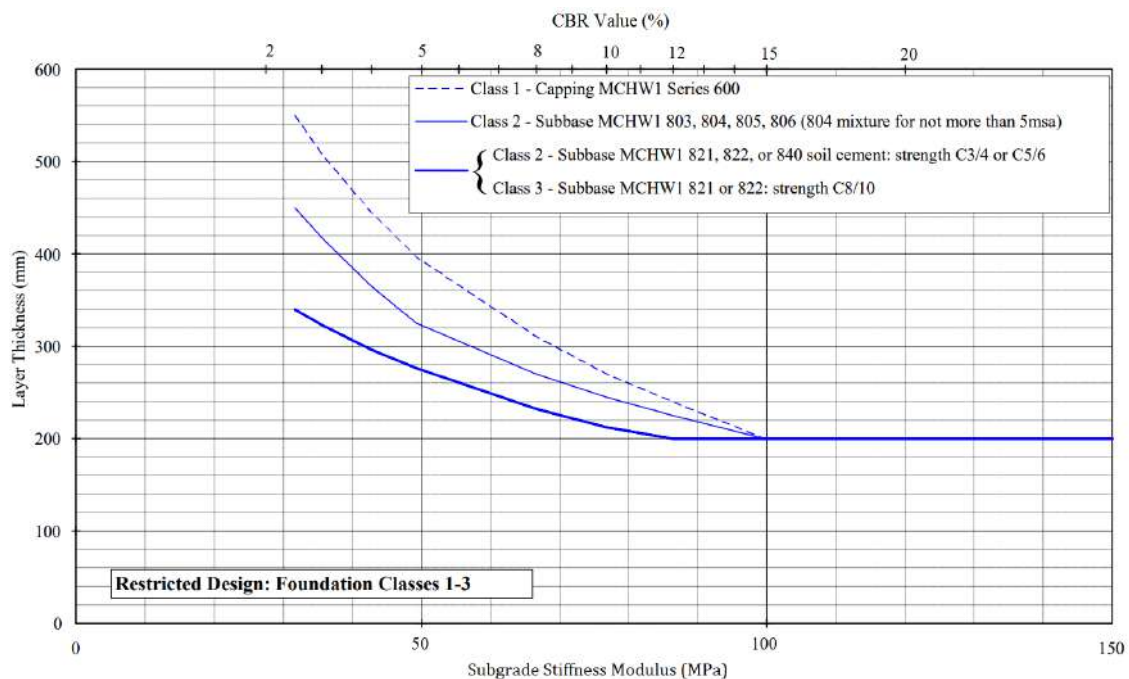


Table 2.1 (DMRB Vol.7 Sec2) 2009

It is recommended that further testing be undertaken during the course of construction works at intervals as set out in the Earthworks Specification, and should any areas indicate lower than expected value, the above plot should be used to determine the thicknesses of any capping or sub-base layers that may need to be placed in these areas.

The use of geosynthetics in the construction of paved areas, will be beneficial, particularly in areas of Made Ground. These could include a geosynthetic (e.g., a geogrid) at subgrade level with further benefit gained by incorporating further layer(s) within the capping/sub-base layer. Road design should be undertaken by a specialist earthworks contractor/designer.

7.3 Infiltration drainage

In infiltration test carried out in trial pit IF01-IF04, the absence of outflow precluded the calculation of any infiltration coefficients. The low-permeability fine-grained soils are therefore considered to be poor infiltration media, and would be deemed unsuitable for the implementation of infiltration drainage systems.

Reference should be made the Sustainable Drainage Systems (SuDS) design guidance, taking into account meteorological conditions and a hydrogeological assessment.

7.4 Waste classification

For consideration of material to be removed from site, a waste classification of the solid soil laboratory results was completed using HazWasteOnline™ software. A copy of the Waste Classification report is included at Appendix I. The Waste Classification report shows that the material tested can be classified as non-hazardous material considering the List of Wastes (LoW) code 17 for Construction and Demolition Wastes (including soils excavated from contaminated sites), specifically 17 05 03* and 17 05 04.

Following completion of the waste classification, and to determine a suitable disposal route for the soil, assessment of the WAC analysis of the samples was completed. The laboratory results of the WAC testing indicate that the soils from the site are suitable for disposal as Inert waste to an appropriate licenced facility.

It is noted that this waste classification assessment has been based solely on the available samples results and corresponding investigation findings. In making this assessment all due care and attention to available and relevant legislative and guidance frameworks has been taken in arriving at the conclusions.

Also, potential areas of localised contamination outside the areas of the investigation cannot be discounted. Any potential contamination identified during site development work by visual or olfactory means should be investigated, including further laboratory testing, and appropriate health & safety, waste disposal and remediation measures adopted. Additional testing of the soils to be disposed from site may also be requested by the individual landfill before acceptance at their facility.

8 REFERENCES

Geotechnical Society of Ireland (2016), Specification & Related Documents for Ground Investigation in Ireland.

IS EN 1997-2: 2007: Eurocode 7 - Geotechnical design - Part 2 Ground investigation and testing. National Standards Authority of Ireland.

BS 5930: 2015+A1:2020: Code of practice for ground investigations. British Standards Institution.

BS EN ISO 14688-1:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 1 Identification and description.

BS EN ISO 14688-2:2018: Geotechnical investigation and testing. Identification and classification of soil. Part 2 Principles for a classification.

BS 1377: 1990: Methods of test for soils for civil engineering purposes. British Standards Institution.

BS EN ISO 14689-1:2018: Geotechnical investigation and testing. Identification and classification of rock. Identification and description.

BS EN ISO 22476-3:2005+A1:2011: Geotechnical investigation and testing. Field testing. Standard penetration test.

Building Research Establishment (2007), BRE Digest 365: Soakaways.

Land contamination risk management (LCRM), (2020) Environment Agency.



CAUSEWAY
— GEOTECH

APPENDIX A
SITE AND EXPLORATORY HOLE LOCATION PLAN





Project No.: 21-0968

Client:

Project Name: Carlisle Residential Development, Kimmage

**Client's
Representative:**

Legend Key



Title:
Site Location Plan

Last Revised:
01/10/2021

Scale:
1:25000



Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

1 Kilometres
4000 Feet



Project No.: 21-0968

Client:

Project Name: Carlisle Residential Development, Kimmage

Client's Representative:

Legend Key

- ◆ Locations By Type - DS
- Locations By Type - RO
- Locations By Type - TP



Title:
Exploratory Hole Location Plan

Last Revised:
01/10/2021

Scale:
1:1500

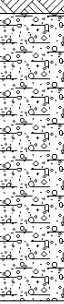


CAUSEWAY
— GEOTECH

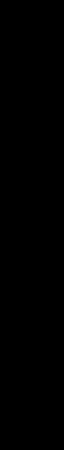
APPENDIX B
BOREHOLE LOGS

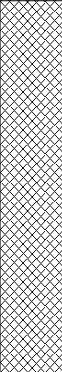
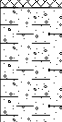


 CAUSEWAY GEOTECH				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID BH01									
Method		Plant Used		Top (m)	Base (m)	Coordinates		Final Depth: 3.00 m		Start Date: 02/09/2021		Driller: JA		Sheet 1 of 1 Scale: 1:50					
Dynamic Sampling		Dando Terrier		0.00	3.00	712983.66 E 730745.71 N		Elevation: 46.53 mOD		End Date: 02/09/2021		Logger: SR		FINAL					
Depth (m)	Sample / Tests	Field Records			Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description				Water	Backfill				
0.20 - 1.00	B6	N=27 (4,4/7,7,6) Hammer SN = 0267					46.33	0.20		TOPSOIL									
0.50	ES1									MADE GROUND: Firm dark brown gravelly CLAY with fragments of red brick. Sand is fine to coarse. Gravel is angular fine to coarse.									
1.00	ES2						45.53	1.00		POSSIBLE MADE GROUND: Stiff light brown slightly sandy gravelly CLAY. Sand is fine to coarse Gravel is angular fine to coarse of mixed lithologies.									
1.00 - 1.30	B7						45.23	1.30		POSSIBLE MADE GROUND: Stiff orange sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse of mixed lithologies.									
1.20	D3									POSSIBLE MADE GROUND: Very soft dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular fine to medium of limestone									
1.20 - 1.65	SPT (S)	N=2 (0,2/0,0,1,1) Hammer SN = 0267																	
1.30 - 2.00	B8						44.53	2.00											
2.00	D4																		
2.00 - 3.00	B9																		
2.00 - 2.45	SPT (S)	Slight seepage at 2.90m																	
3.00	D5						43.53	3.00											
3.00 - 3.22	SPT (S)	N=50 (8,7/50 for 75mm) Hammer SN = 0267							End of Borehole at 3.00m										
Water Strikes													Casing Details		Remarks				
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	To (m)	Diameter	Hand dug inspection pit excavated to 1.20m.													
2.90	2.90																		
Termination Reason									Last Updated										
Terminated on refusal.									04/10/2021										

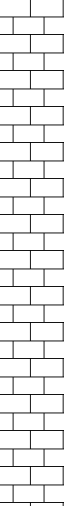
 CAUSEWAY GEOTECH				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers			Borehole ID BH02			
Method		Plant Used		Top (m)	Base (m)	Coordinates		Final Depth: 2.00 m		Start Date: 02/09/2021	Driller: JA	Sheet 1 of 1 Scale: 1:50 FINAL
Dynamic Sampling		Dando Terrier		0.00	2.00	713027.23 E 730739.23 N		Elevation: 46.17 mOD		End Date: 02/09/2021	Logger: SR	
Depth (m)	Sample / Tests	Field Records		Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description		Water	Backfill
0.10 - 2.00	B6	N=25 (5,6/5,6,6,8) Hammer SN = 0267 N=41 (2,8/9,7,4,21) Hammer SN = 0267				46.07	0.10	 TOPSOIL Stiff mottled brownish grey and orange slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is angular fine to medium of limestone. Cobbles are subangular of limestone.				
0.50	ES1					44.17	2.00					
1.00	ES2											
1.20	D3											
1.20 - 1.65	SPT (S)											
2.00	D4								End of Borehole at 2.00m			
2.00 - 2.45	SPT (S)											
Water Strikes				Casing Details		Remarks						
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	To (m)	Diameter	Hand dug inspection pit excavated to 1.20m. No groundwater encountered.						
Termination Reason										Last Updated		
Terminated on refusal.										04/10/2021		

Water Strikes				Casing Details		Remarks		
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	To (m)	Diameter			
						Hand dug inspection pit excavated to 1.20m. No groundwater encountered.		
						Termination Reason Terminated on refusal.		Last Updated 04/10/2021
								

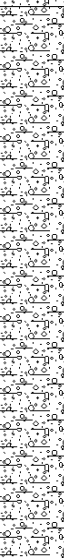
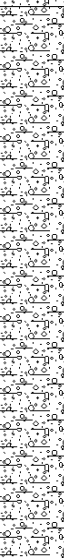
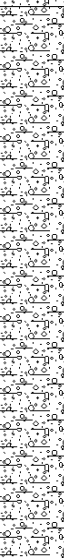
				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers			Borehole ID BH04																												
Method		Plant Used		Top (m)	Base (m)	Coordinates		Final Depth: 3.00 m Start Date: 03/09/2021 Driller: JA		Sheet 1 of 1 Scale: 1:50																											
Dynamic Sampling		Dando Terrier		0.00	3.00	713094.76 E 730688.98 N		Elevation: 46.11 mOD End Date: 03/09/2021 Logger: SR		FINAL																											
Depth (m)	Sample / Tests	Field Records		Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill																										
0.30 0.30 - 0.80	ES1 B6	N=24 (3,3/5,6,7,6) Hammer SN = 0267				45.81	0.30		TOPSOIL																												
0.80 - 2.00	B7			45.31	0.80		MADE GROUND: Firm light brown slightly sandy gravelly CLAY. Sand is fine. Gravel is subrounded fine to medium.																														
1.00 1.20 1.20 - 1.65	ES2 D3 SPT (S)						POSSIBLE MADE GROUND: Firm to stiff brownish grey slightly sandy gravelly CLAY with low cobble content. Sand is fine. Gravel is angular fine to coarse.																														
2.00 2.00 - 3.00 2.00 - 2.45	D4 B8 SPT (S)			44.11	2.00		POSSIBLE MADE GROUND: Very soft mottled brownish orangish grey sandy CLAY. Sand is fine to medium. Gravel is angular fine to coarse.																														
3.00 3.00 - 3.38	D5 SPT (S)	N=50 (1,11/50 for 225mm) Hammer SN = 0267				43.11	3.00		End of Borehole at 3.00m																												
<table border="1"> <tr> <th colspan="4">Water Strikes</th> <th colspan="2">Casing Details</th> <th rowspan="2">Remarks</th> </tr> <tr> <th>Struck at (m)</th> <th>Casing to (m)</th> <th>Time (min)</th> <th>Rose to (m)</th> <th>To (m)</th> <th>Diameter</th> </tr> <tr> <td>2.60</td> <td>2.60</td> <td></td> <td></td> <td></td> <td></td> <td>Hand dug inspection pit excavated to 1.20m.</td> </tr> <tr> <td colspan="6"> Termination Reason Terminated on refusal. </td> <td> Last Updated 04/10/2021 </td> </tr> </table>											Water Strikes				Casing Details		Remarks	Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	To (m)	Diameter	2.60	2.60					Hand dug inspection pit excavated to 1.20m.	Termination Reason Terminated on refusal.						Last Updated 04/10/2021
Water Strikes				Casing Details		Remarks																															
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	To (m)	Diameter																																
2.60	2.60					Hand dug inspection pit excavated to 1.20m.																															
Termination Reason Terminated on refusal.						Last Updated 04/10/2021																															

 CAUSEWAY GEOTECH				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID BH05															
Method		Plant Used		Top (m)		Base (m)		Coordinates		Final Depth: 3.60 m		Start Date: 03/09/2021		Driller: JA		Sheet 1 of 1 Scale: 1:50									
Dynamic Sampling		Dando Terrier		0.00		3.60		713088.65 E 730649.12 N		Elevation: 46.54 mOD		End Date: 03/09/2021		Logger: SR		FINAL									
Depth (m)		Sample / Tests		Field Records		Casing Depth (m)		Water Depth (m)		Level mOD		Depth (m)		Legend		Description		Water		Backfill					
0.30 - 2.80		B7		N=17 (2,3/4,4,5,4) Hammer SN = 0267						46.24		0.30				TOPSOIL									
0.50		ES1														MADE GROUND: Firm to stiff brownish grey slightly sandy CLAY with low cobble content and fragments of red brick. Sand is fine to coarse.									
1.00		ES2																							
1.20		D3																							
1.20 - 1.65		SPT (S)		N=18 (2,3/2,3,7,6) Hammer SN = 0267						43.74															
2.00		D4		Seepage at 2.80																					
2.00 - 2.45		SPT (S)																							
2.80 - 3.60		B8		N=29 (2,2/4,4,8,13) Hammer SN = 0267								42.94		2.80				Very stiff orangish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine to coarse.							
3.00		B5																							
3.00 - 3.45		SPT (S)																							
3.60		D6		N=50 (25 for 75mm/50 for 75mm) Hammer SN = 0267																					
3.60 - 3.75		SPT (S)										3.60				End of Borehole at 3.60m									

 CAUSEWAY GEOTECH				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID RC01					
Method Rotary Drilling		Plant Used Comacchio 205		Top (m) 0.00		Base (m) 10.00		Coordinates 712995.08 E 730750.57 N		Final Depth: 10.00 m Start Date: 20/09/2021 Driller: RS		Sheet 1 of 2 Scale: 1:40			
								Elevation: 46.52 mOD End Date: 20/09/2021 Logger: SR		FINAL					
Depth (m)	Sample / Tests	Field Records			Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description			Water	Backfill	
1.20 - 1.65	SPT (S)	N=21 (4,4/5,5,6,5) Hammer SN = 0200					46.42	0.10		TOPSOIL Firm to stiff brown sandy gravelly CLAY. (Driller's description)					
								2.00		Grey weathered LIMESTONE. (Driller's description)					
								2.90		Grey LIMESTONE. (Driller's description)					
					</										

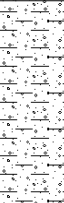
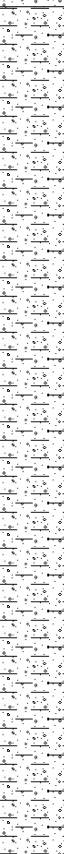
 CAUSEWAY GEOTECH					Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID RC01			
Method Rotary Drilling		Plant Used Comacchio 205	Top (m) 0.00	Base (m) 10.00	Coordinates 712995.08 E 730750.57 N		Final Depth: 10.00 m		Start Date: 20/09/2021	Driller: RS	Sheet 2 of 2 Scale: 1:40			
							Elevation: 46.52 mOD		End Date: 20/09/2021	Logger: SR	FINAL			
Depth (m)	Sample / Tests	Field Records		Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description			Water	Backfill	
						36.52	10.00		Grey LIMESTONE. (Driller's description)					7.5
														8.0
														8.5
														9.0
														9.5
														10.0
									End of Borehole at 10.00m					10.5
														11.0
														11.5
														12.0
														12.5
														13.0
														13.5
														14.0
														14.5
Water Strikes				Remarks										
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)											
Casing Details		Water Added												
To (m)	Diam (mm)	From (m)	To (m)											
				Core Barrel	Flush Type	Termination Reason			Last Updated					
						Terminated at scheduled depth.			04/10/2021					

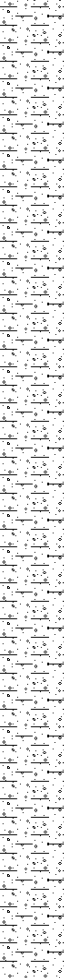
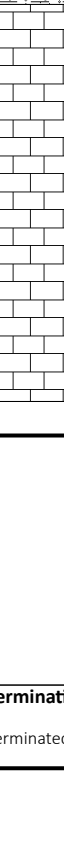
 CAUSEWAY GEOTECH				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID RC02					
Method Rotary Drilling		Plant Used Comacchio 205		Top (m) 0.00		Base (m) 5.50		Coordinates 713063.89 E 730710.73 N		Final Depth: 5.50 m Start Date: 20/09/2021 Driller: RS		Sheet 1 of 1 Scale: 1:40			
								Elevation: 46.08 mOD End Date: 20/09/2021 Logger: SR		FINAL					
Depth (m)	Sample / Tests	Field Records			Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description			Water	Backfill	
							45.98	0.10		TOPSOIL Firm to stiff brown sandy gravelly CLAY. (Driller's description)					
							44.08	2.00		Grey weathered LIMESTONE. (Driller's description)					
							43.68	2.40		Grey LIMESTONE. (Driller's description)					
							40.58	5.50		End of Borehole at 5.50m					
Water Strikes				Remarks											
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)												
Casing Details		Water Added													
To (m)	Diam (mm)	From (m)	To (m)												
				Core Barrel	Flush Type	Termination Reason				Last Updated					
						Terminated at scheduled depth.				04/10/2021					

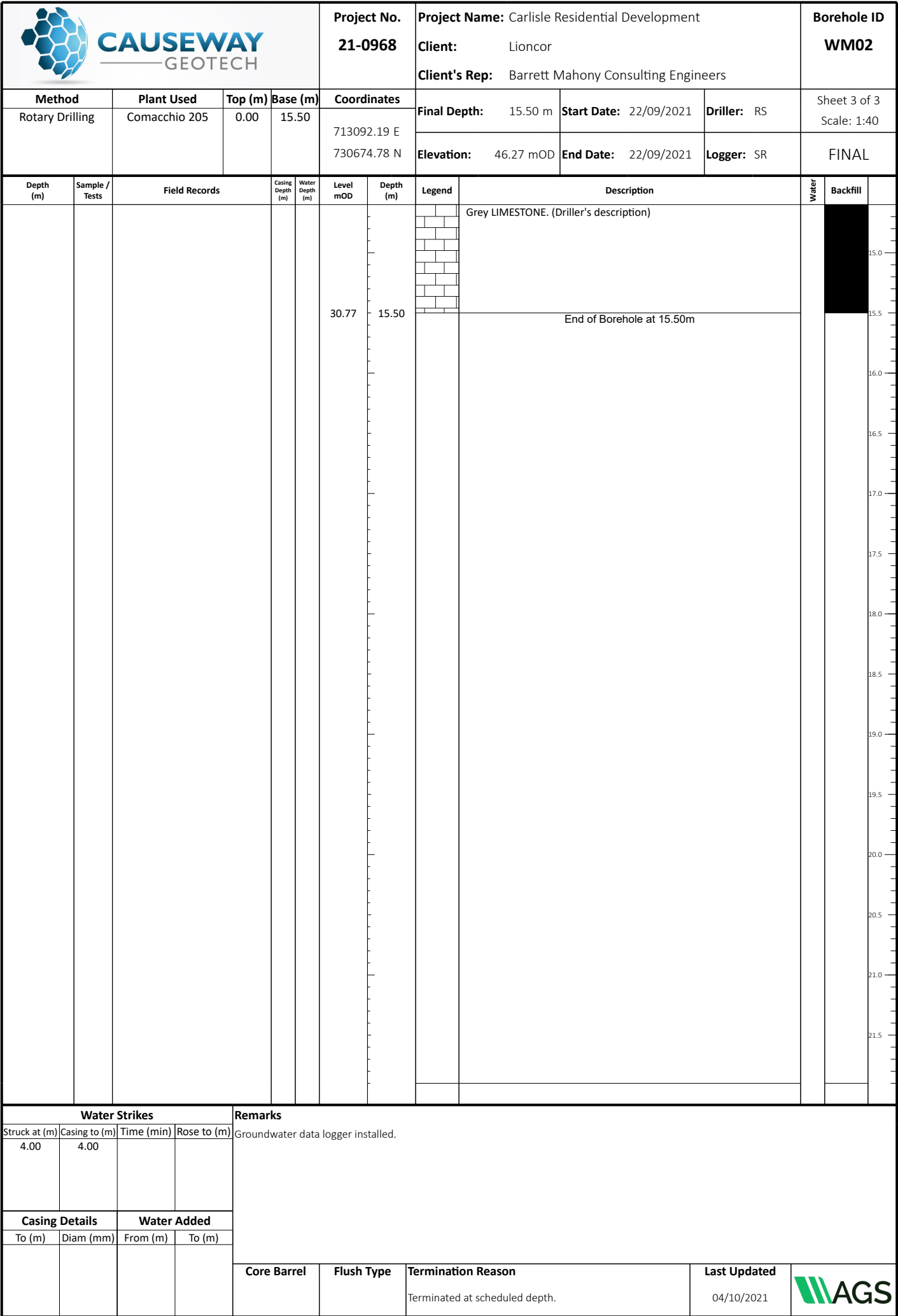
				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID RC03																																																																										
Method Rotary Drilling		Plant Used Comacchio 205		Top (m) 0.00		Base (m) 10.00		Coordinates 713090.69 E 730655.96 N		Final Depth: 10.00 m Start Date: 21/09/2021 Driller: RS		Sheet 1 of 2 Scale: 1:40																																																																								
								Elevation: 46.53 mOD End Date: 21/09/2021 Logger: SR		FINAL																																																																										
<table><tr><th>Depth (m)</th><th>Sample / Tests</th><th>Field Records</th><th>Casing Depth (m)</th><th>Water Depth (m)</th><th>Level mOD</th><th>Depth (m)</th><th>Legend</th><th>Description</th><th>Water</th><th>Backfill</th><th></th></tr><tr><td>1.20 - 1.65</td><td>SPT (C)</td><td>N=20 (3,4/5,5,5,5) Hammer SN = 0200</td><td></td><td></td><td>46.42</td><td>0.10</td><td></td><td>TOPSOIL MADE GROUND: Firm to stiff brown sandy gravelly CLAY with high cobble content. (Driller's description)</td><td></td><td></td><td>0.5</td></tr><tr><td>2.50 - 2.95</td><td>SPT (S)</td><td>N=25 (4,4/6,6,7,6) Hammer SN = 0200</td><td></td><td></td><td>44.02</td><td>2.50</td><td></td><td>Stiff brown sandy slightly sandy slightly gravelly CLAY with low cobble content. (Driller's description)</td><td></td><td></td><td>2.5</td></tr><tr><td>4.00 - 4.45</td><td>SPT (C)</td><td>N=31 (5,5/7,7,8,9) Hammer SN = 0200</td><td></td><td></td><td>42.52</td><td>4.00</td><td></td><td>Very stiff brown sandy slightly sandy slightly gravelly CLAY with low cobble content. (Driller's description)</td><td></td><td></td><td>4.0</td></tr><tr><td>5.50 - 5.95</td><td>SPT (C)</td><td>N=32 (4,5/6,8,9,9) Hammer SN = 0200</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>5.5</td></tr><tr><td>7.00 - 7.45</td><td>SPT (C)</td><td>N=42 (7,8/10,10,11,11) Hammer SN = 0200</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>7.0</td></tr></table>													Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill		1.20 - 1.65	SPT (C)	N=20 (3,4/5,5,5,5) Hammer SN = 0200			46.42	0.10		TOPSOIL MADE GROUND: Firm to stiff brown sandy gravelly CLAY with high cobble content. (Driller's description)			0.5	2.50 - 2.95	SPT (S)	N=25 (4,4/6,6,7,6) Hammer SN = 0200			44.02	2.50		Stiff brown sandy slightly sandy slightly gravelly CLAY with low cobble content. (Driller's description)			2.5	4.00 - 4.45	SPT (C)	N=31 (5,5/7,7,8,9) Hammer SN = 0200			42.52	4.00		Very stiff brown sandy slightly sandy slightly gravelly CLAY with low cobble content. (Driller's description)			4.0	5.50 - 5.95	SPT (C)	N=32 (4,5/6,8,9,9) Hammer SN = 0200									5.5	7.00 - 7.45	SPT (C)	N=42 (7,8/10,10,11,11) Hammer SN = 0200									7.0
Depth (m)	Sample / Tests	Field Records	Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill																																																																										
1.20 - 1.65	SPT (C)	N=20 (3,4/5,5,5,5) Hammer SN = 0200			46.42	0.10		TOPSOIL MADE GROUND: Firm to stiff brown sandy gravelly CLAY with high cobble content. (Driller's description)			0.5																																																																									
2.50 - 2.95	SPT (S)	N=25 (4,4/6,6,7,6) Hammer SN = 0200			44.02	2.50		Stiff brown sandy slightly sandy slightly gravelly CLAY with low cobble content. (Driller's description)			2.5																																																																									
4.00 - 4.45	SPT (C)	N=31 (5,5/7,7,8,9) Hammer SN = 0200			42.52	4.00		Very stiff brown sandy slightly sandy slightly gravelly CLAY with low cobble content. (Driller's description)			4.0																																																																									
5.50 - 5.95	SPT (C)	N=32 (4,5/6,8,9,9) Hammer SN = 0200									5.5																																																																									
7.00 - 7.45	SPT (C)	N=42 (7,8/10,10,11,11) Hammer SN = 0200									7.0																																																																									
<table><tr><th colspan="4">Water Strikes</th><th colspan="9">Remarks</th></tr><tr><th>Struck at (m)</th><th>Casing to (m)</th><th>Time (min)</th><th>Rose to (m)</th><td colspan="9" rowspan="4"></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td colspan="2">Casing Details</td><td colspan="2">Water Added</td></tr><tr><td>To (m)</td><td>Diam (mm)</td><td>From (m)</td><td>To (m)</td></tr><tr><td></td><td></td><td></td><td></td><td>Core Barrel</td><td>Flush Type</td><td colspan="3">Termination Reason</td><td colspan="2">Last Updated</td><td colspan="2"></td></tr><tr><td colspan="5"></td><td></td><td></td><td colspan="3">Terminated at scheduled depth.</td><td colspan="2">04/10/2021</td><td colspan="2"></td></tr></table>													Water Strikes				Remarks									Struck at (m)	Casing to (m)	Time (min)	Rose to (m)														Casing Details		Water Added		To (m)	Diam (mm)	From (m)	To (m)					Core Barrel	Flush Type	Termination Reason			Last Updated											Terminated at scheduled depth.			04/10/2021										
Water Strikes				Remarks																																																																																
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)																																																																																	
Casing Details		Water Added																																																																																		
To (m)	Diam (mm)	From (m)	To (m)																																																																																	
				Core Barrel	Flush Type	Termination Reason			Last Updated																																																																											
							Terminated at scheduled depth.			04/10/2021																																																																										

Method		Plant Used	Top (m)	Base (m)	Coordinates		Final Depth:		Start Date:	Driller:	Sheet 2 of 2 Scale: 1:40	
Rotary Drilling		Comacchio 205	0.00	10.00	713090.69 E 730655.96 N		Elevation: 46.53 mOD		End Date: 21/09/2021	Logger: SR	FINAL	
Depth (m)	Sample / Tests	Field Records		Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description	Water	Backfill	
8.50 - 8.95	SPT (C)	N=47 (6,9/11,11,12,13) Hammer SN = 0200							Very stiff brown sandy slightly sandy slightly gravelly CLAY with low cobble content. (Driller's description)			7.5
10.00 - 10.42	SPT (C)	N=50 (8,11/50 for 265mm) Hammer SN = 0200				36.52	10.00		End of Borehole at 10.00m			10.0
												10.5
												11.0
												11.5
												12.0
												12.5
												13.0
												13.5
												14.0
												14.5
Water Strikes				Remarks								
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)									
Casing Details		Water Added										
To (m)	Diam (mm)	From (m)	To (m)									
				Core Barrel		Flush Type	Termination Reason			Last Updated	AGS	
							Terminated at scheduled depth.			04/10/2021		



				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID WM02					
Method Rotary Drilling		Plant Used Comacchio 205		Top (m) 0.00		Base (m) 15.50		Coordinates 713092.19 E 730674.78 N		Final Depth: 15.50 m Start Date: 22/09/2021 Driller: RS		Sheet 1 of 3 Scale: 1:40			
								Elevation: 46.27 mOD End Date: 22/09/2021 Logger: SR		FINAL					
Depth (m)	Sample / Tests	Field Records		Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description				Water	Backfill	
2.50 - 2.95	SPT (C)	N=24 (4,5/5,6,6,7) Hammer SN = 0200				46.17	0.10		TOPSOIL MADE GROUND: Firm to stiff brown sandy gravelly CLAY. (Driller's description)						
							44.77	1.50		Grey BOULDER of limestone. (Driller's description)					
							44.57	1.70		Stiff brown sandy gravelly CLAY. (Driller's description)					
							43.47	2.80		Stiff to very stiff brown sandy gravelly CLAY. (Driller's description)					
4.00 - 4.45	SPT (C)	N=29 (5,6/7,7,7,8) Hammer SN = 0200 Water strike at 4.00													
5.50 - 5.95	SPT (C)	N=29 (4,6/6,6,8,9) Hammer SN = 0200													
7.00 - 7.45	SPT (C)	N=39 (7,7/8,10,10,11) Hammer SN = 0200													
Water Strikes				Remarks											
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Groundwater data logger installed.											
4.00	4.00														
Casing Details				Water Added											
To (m)	Diam (mm)	From (m)	To (m)												
				Core Barrel	Flush Type	Termination Reason			Last Updated						
						Terminated at scheduled depth.			04/10/2021						

				Project No. 21-0968		Project Name: Carlisle Residential Development Client: Lioncor Client's Rep: Barrett Mahony Consulting Engineers				Borehole ID WM02					
Method Rotary Drilling		Plant Used Comacchio 205		Top (m) 0.00		Base (m) 15.50		Coordinates 713092.19 E 730674.78 N		Final Depth: 15.50 m Start Date: 22/09/2021 Driller: RS		Sheet 2 of 3 Scale: 1:40			
								Elevation: 46.27 mOD End Date: 22/09/2021 Logger: SR		FINAL					
Depth (m)	Sample / Tests	Field Records		Casing Depth (m)	Water Depth (m)	Level mOD	Depth (m)	Legend	Description				Water	Backfill	
8.50 - 8.95	SPT (C)	N=35 (5,6/8,9,9,9) Hammer SN = 0200							Stiff to very stiff brown sandy gravelly CLAY. (Driller's description)						7.5
10.00 - 10.42	SPT (C)	N=50 (11,13/50 for 265mm) Hammer SN = 0200													8.0
11.50 - 11.88	SPT (C)	N=50 (10,14/50 for 235mm) Hammer SN = 0200				33.77	12.50		Grey LIMESTONE. (Driller's description)						8.5
															9.0
															9.5
															10.0
															10.5
															11.0
															11.5
															12.0
															12.5
															13.0
															13.5
															14.0
															14.5
Water Strikes				Remarks											
Struck at (m)	Casing to (m)	Time (min)	Rose to (m)	Groundwater data logger installed.											
4.00	4.00														
Casing Details				Water Added											
To (m)	Diam (mm)	From (m)	To (m)												
				Core Barrel	Flush Type	Termination Reason				Last Updated		AGS			
						Terminated at scheduled depth.				04/10/2021					





CAUSEWAY
— GEOTECH

APPENDIX C
TRIAL PIT LOGS



			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID TP01	
			Coordinates 712971.92 E 730769.42 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers				
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator			Elevation 46.41 mOD		Date: 02/09/2021			Logger: RS	
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water	
0.50 0.50		B3 ES1	Fast seepage at 2.40m	46.11	0.30	 TOPSOIL	MADE GROUND: Stiff brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are of limestone.		0.5
1.00 1.00		B4 ES2							
2.00		B5							
				43.91	2.50		End of trial pit at 2.50m		2.5
									3.0
									3.5
									4.0
									4.5
Water Strikes			Remarks:						
Struck at (m)		Remarks	Depth: 2.50 Width: 0.50 Length: 4.50						
2.40		Fast seepage at 2.40m	Stability: Stable		Termination Reason: Terminated on refusal.			Last Updated 04/10/2021	
									

			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID TP02		
			Coordinates 712967.28 E 730745.32 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers					
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25		
Plant: 13T Tracked Excavator			Elevation 46.76 mOD		Date: 02/09/2021			Logger: RS		
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water		
0.50 0.50		B3 ES1		46.46	0.30		TOPSOIL			
							MADE GROUND: Fir light brown slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of various lithologies.		0.5	
1.00 1.00		B4 ES2		46.06	0.70		Firm light brown slightly sandy gravelly CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is subangular to subrounded of various lithologies.		1.0	
2.00		B5							1.5	
									2.0	
									2.5	
									3.0	
				43.76	3.00		End of trial pit at 3.00m		3.5	
									4.0	
									4.5	
Water Strikes			Remarks:							
Struck at (m)		Depth: 3.00 Width: 0.50 Length: 5.10								
Remarks										
			Stability: Stable		Termination Reason: Terminated at scheduled depth.			Last Updated 04/10/2021		
										

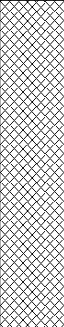
			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID TP03												
			Coordinates 713023.64 E 730746.28 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers															
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25												
Plant: 13T Tracked Excavator			Elevation 46.14 mOD		Date: 02/09/2021			Logger: RS												
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water												
0.50		ES1		45.84	0.30		TOPSOIL													
1.00 1.00		B3 ES2					Stiff brown slightly sandy gravelly CLAY with high cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are of limestone.		0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5											
				44.34	1.80		End of trial pit at 1.80m													
<table border="1"> <tr> <td colspan="2">Water Strikes</td> <td rowspan="3"> Depth: 1.80 Width: 0.50 Length: 5.65 Stability: Stable </td> <td rowspan="3"> Remarks: No groundwater encountered. </td> <td rowspan="3"> Termination Reason: Terminated on refusal. </td> <td rowspan="3"> Last Updated 04/10/2021 </td> <td rowspan="3">  </td> </tr> <tr> <td>Struck at (m)</td> <td>Remarks</td> </tr> <tr> <td></td> <td></td> </tr> </table>										Water Strikes		Depth: 1.80 Width: 0.50 Length: 5.65 Stability: Stable	Remarks: No groundwater encountered.	Termination Reason: Terminated on refusal.	Last Updated 04/10/2021		Struck at (m)	Remarks		
Water Strikes		Depth: 1.80 Width: 0.50 Length: 5.65 Stability: Stable	Remarks: No groundwater encountered.	Termination Reason: Terminated on refusal.	Last Updated 04/10/2021															
Struck at (m)	Remarks																			

			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID TP05	
			Coordinates 713075.61 E 730681.87 N		Client: Lioncor				
Method: Trial Pitting					Client's Representative: Barrett Mahony Consulting Engineers			Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator			Elevation 46.50 mOD		Date: 02/09/2021			Logger: RS	
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water	
0.50 0.50		B3 ES1		46.35	0.15	TOPSOIL			0.5
1.00 1.00		B4 ES2				MADE GROUND: Stiff brown slightly sandy slightly gravelly CLAY with fragments of red brick and low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are of limestone.			1.0
				44.80	1.70	Grey sandy silty subangular GRAVEL of limestone. Sand is fine to coarse. (Possible weathered bedrock)			1.5
				44.40	2.10	End of trial pit at 2.10m			2.0
									2.5
									3.0
									3.5
									4.0
									4.5
Water Strikes			Depth: 2.10		Remarks: No groundwater encountered.				
Struck at (m)		Remarks	Width: 0.50						
			Length: 5.10						
			Stability: Stable		Termination Reason: Terminated on refusal.			Last Updated 04/10/2021	
									

			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID TP06		
			Coordinates 713102.71 E 730711.08 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers					
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25		
Plant: 13T Tracked Excavator			Elevation 45.89 mOD		Date: 02/09/2021			Logger: RS		
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water		
0.50		ES1	Fast seepage at 2.90m	44.24	1.65		MADE GROUND: Stiff brown slightly sandy very gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are of limestone.		0.5	
1.00 1.00		B3 ES2							Brownish yellow very gravelly very silty fine to coarse SAND with high cobble content. Gravel is subangular fine to coarse of limestone. Cobbles are of limestone.	1.0 1.5
2.00		B4							End of trial pit at 3.00m	2.0 2.5
3.00		B5		42.88	3.00				3.0 3.5 4.0 4.5	

Water Strikes		Depth: 3.00 Width: 0.50 Length: 5.00 Stability: Stable	Remarks: Terminated at scheduled depth.		Last Updated 04/10/2021	
Struck at (m)	Remarks					
2.90	Fast seepage at 2.90m					

			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID TP07	
			Coordinates 713106.60 E 730668.94 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers				
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator			Elevation 46.00 mOD		Date: 03/09/2021			Logger: NP	
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water	
0.50		B3 ES1		45.64	0.35		TOPSOIL with grass		0.5
0.50							MADE GROUND: Stiff brown sandy slightly gravelly CLAY with low cobble content and fragments of brick. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are subangular of limestone.		
1.00		ES2							1.0
1.50		B4		44.60	1.40		MADE GROUND: Stiff slightly gravelly sandy CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are subangular of limestone.		1.5
2.50		B5							2.0
									2.5
				43.00	3.00		End of trial pit at 3.00m		3.0
									3.5
									4.0
									4.5
Water Strikes			Depth: 3.00 Width: 0.60 Length: 3.20		Remarks: No groundwater encountered.				
Struck at (m)		Remarks		Stability: Stable		Termination Reason: Terminated at scheduled depth.		Last Updated 04/10/2021	
									

			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID TP08												
			Coordinates 713071.78 E 730644.93 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers															
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25												
Plant: 13T Tracked Excavator			Elevation 46.65 mOD		Date: 03/09/2021			Logger: NP												
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water												
0.50		ES1		46.25	0.40		TOPSOIL with grass													
1.00 1.00		B3 ES2					MADE GROUND: Stiff brown sandy slightly gravelly CLAY with low cobble content and fragments of brick. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are subangular of limestone.		0.5 1.0											
1.55		B4		45.15	1.50		Brown and light grey sandy subangular fine to coarse GRAVEL of limestone. (Possible rockhead)		1.5											
				44.95	1.70		End of trial pit at 1.70m		2.0 2.5 3.0 3.5 4.0 4.5											
<table border="1"> <tr> <td colspan="2">Water Strikes</td> <td rowspan="3"> Depth: 1.70 Width: 0.60 Length: 3.70 Stability: Stable </td> <td colspan="2" rowspan="3"> Remarks: No groundwater encountered. Termination Reason: Terminated on concrete obstruction. </td> <td rowspan="3"> Last Updated 04/10/2021 </td> <td rowspan="3">  </td> </tr> <tr> <td>Struck at (m)</td> <td>Remarks</td> </tr> <tr> <td></td> <td></td> </tr> </table>										Water Strikes		Depth: 1.70 Width: 0.60 Length: 3.70 Stability: Stable	Remarks: No groundwater encountered. Termination Reason: Terminated on concrete obstruction.		Last Updated 04/10/2021		Struck at (m)	Remarks		
Water Strikes		Depth: 1.70 Width: 0.60 Length: 3.70 Stability: Stable	Remarks: No groundwater encountered. Termination Reason: Terminated on concrete obstruction.		Last Updated 04/10/2021															
Struck at (m)	Remarks																			



CAUSEWAY
— GEOTECH

APPENDIX D
TRIAL PIT PHOTOGRAPHS





TP01



TP01



TP01



TP01



TP01



TP01



TP02



TP02



TP02



TP02



TP02



TP02



TP02



TP03



TP03



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TP04



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TP05



TP05



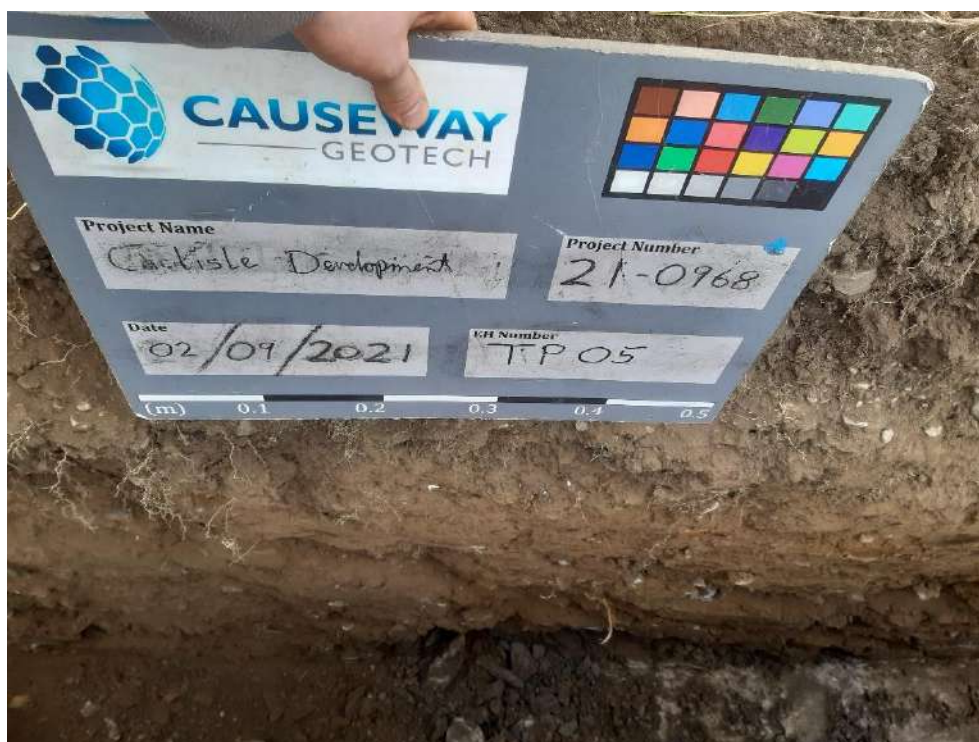
TP05



TP05



TP05



TP05



TP06



TP06



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TP07



TP07



TP07



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TP07



TP08



TP08



TP08



TP08



CBR01



CBR01



CBR01



CBR01



CBR01



CBR02



CBR02



CBR02



CBR02



CBR02



CBR03



CBR03



CBR03



CBR03



IF03



IF03



IF04



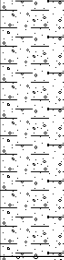
IF04



CAUSEWAY
— GEOTECH

APPENDIX E
PLATE LOAD TEST RESULTS



 CAUSEWAY GEOTECH			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID CBR01		
			Coordinates 713016.63 E 730755.91 N		Client: Lioncor					
Method: Trial Pitting			Elevation 46.00 mOD			Client's Representative: Barrett Mahony Consulting Engineers			Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator						Date: 03/09/2021			Logger: NP	
Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description			Water	
			45.70	0.30		TOPSOIL with grass				
						Stiff brown sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone and sandstone. Cobbles are subangular of limestone.				0.5
			44.40	1.60		Soft brown slightly sandy gravelly CLAY with pockets of grey fine to coarse sand. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Boulders are subrounded of limestone.				1.0
		Slow seepage at 2.00m				Brown and grey clayey slightly silty sandy subangular fine to coarse GRAVEL of limestone. with low cobble content. Sand is fine to coarse. Cobbles are subangular fo limestone.				1.5
			43.55	2.45		Possible LIMESTONE				2.0
			43.30	2.70						2.5
			43.20	2.80		End of trial pit at 2.80m				3.0
										3.5
										4.0
										4.5
Water Strikes			Depth: 2.80		Remarks:					
Struck at (m)		Remarks	Width: 0.70							
2.00		Slow seepage at 2.00m	Length: 2.90							
Stability: Stable			Termination Reason: Terminated on refusal.			Last Updated 01/10/2021				

CBR TEST REPORT

Client: Causeway Geotech Ltd
8 Drumahiskey Rd,
Bendooragh,
Ballymoney
BT53 7QL
Northern Ireland
FAO: Mr. Sean Ross

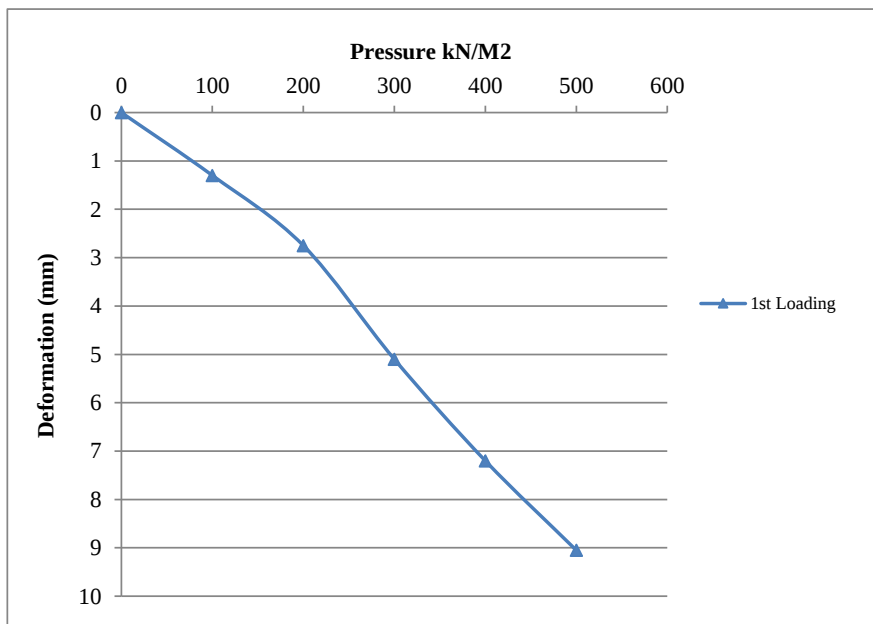
BHP Ref. No.: 21/09/028-1
Order No.: Not Supplied
Date Tested: 02/09/2021
Test Specification: Client Spec.
Item: Top Soil

Analysing
Testing
Consulting
Calibrating



BHP Laboratories Ltd
New Road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax +353 61 455447
E Mail jamespurcell@bhp.ie

Client Reference: Carlisle, Kimmage, Dublin.
Location Reference: Site CBR Test Location - Test 1
Type of Reaction Load: 14T
Plate Diameter: 450mm
BS 1377:Part 9:1990, Cl.4.1 (Plate Loading Test)



Bearing Pressure kN/m²	Plate Settlement (mm)
0	0
100	1.30
200	2.75
300	5.10
400	7.20
500	9.05

Maximum Applied Pressure (kN/m ²)	500
Maximum Deformation (mm)	9.05
Estimated CBR % @ 1.25mm deformation	8
K= (KN/m ² /m) @ 1.25mm deformation	47616

Remarks:

CBR calculated in accordance with Part 2 DMRB Volume 7 : Part 2 HD 25/94.
Time Recorded at each interval was 2 minutes.



Tony Hehir
Field Testing Services Manager
For and On Behalf of BHP Laboratories



Seamus O' Connell
Laboratory Technical Manager
Issue Date: 03/09/2021

Tested by BHP Laboratories, Limerick (c/o above address) Phone:(061) 455399 Fax:(061) 455447

This test report shall not be duplicated in full without the permission of the test laboratory.

Where the deformation does not exceed 1.25mm during the test, the CBR and K values have been estimated and are not included under our scope of accreditation.

			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID CBR02	
			Coordinates 713044.32 E 730735.09 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers				
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator			Elevation 45.71 mOD		Date: 03/09/2021			Logger: NP	
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water	
				45.36	0.35		TOPSOIL with grass		
							MADE GROUND: Stiff brown sandy gravelly CLAY with medium cobble content and fragments of brick. Sand is fine to coarse. Gravel is subangular fine to coarse limestone. Cobbles are subangular to limestone.		0.5
				44.41	1.30		LIMESTONE		1.0
				44.31	1.40		End of trial pit at 1.40m		1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
Water Strikes			Depth: 1.40 Width: 0.60 Length: 3.20		Remarks: No groundwater encountered.				
Struck at (m)		Remarks		Stability: Stable		Termination Reason: Terminated on refusal.		Last Updated 01/10/2021	
									

CBR TEST REPORT

Client: Causeway Geotech Ltd
8 Drumahiskey Rd,
Bendooragh,
Ballymoney
BT53 7QL
Northern Ireland
FAO: Mr. Sean Ross

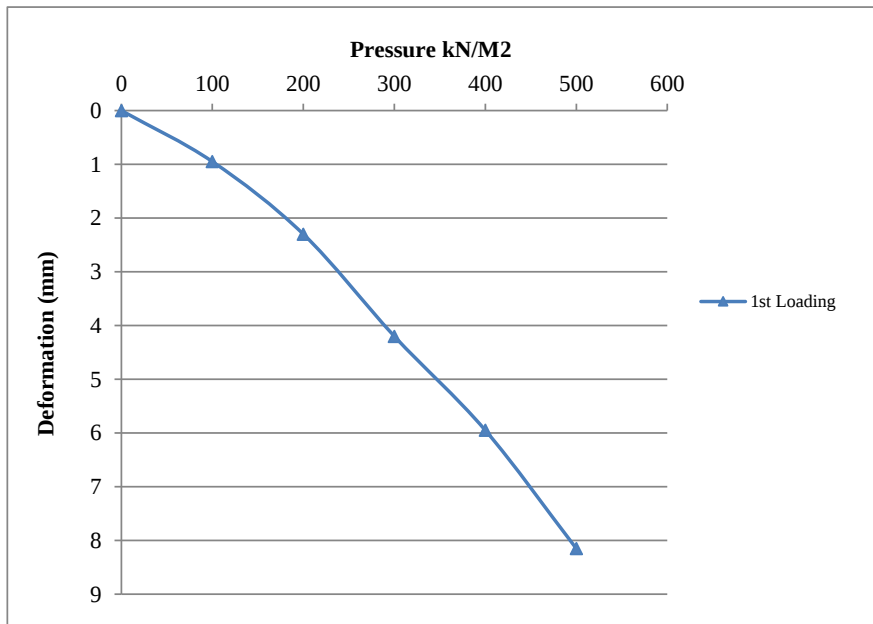
BHP Ref. No.: 21/09/028-2
Order No.: Not Supplied
Date Tested: 02/09/2021
Test Specification: Client Spec.
Item: Top Soil

Analysing
Testing
Consulting
Calibrating



BHP Laboratories Ltd
New Road
Thomondgate
Limerick
Ireland
Tel +353 61 455399
Fax +353 61 455447
E Mail jamespurcell@bhp.ie

Client Reference: Carlisle, Kimmage, Dublin.
Location Reference: Site CBR Test Location - Test 2
Type of Reaction Load: 14T
Plate Diameter: 450mm
BS 1377:Part 9:1990, Cl.4.1 (Plate Loading Test)



Bearing Pressure kN/m ²	Plate Settlement (mm)
0	0
100	0.95
200	2.30
300	4.20
400	5.95
500	8.15

Maximum Applied Pressure (kN/m ²)	500
Maximum Deformation (mm)	8.15
Estimated CBR % @ 1.25mm deformation	12
K= (KN/m ² /m) @ 1.25mm deformation	60512

Remarks:

CBR calculated in accordance with Part 2 DMRB Volume 7 : Part 2 HD 25/94.
Time Recorded at each interval was 2 minutes.



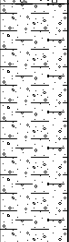
Tony Hehir
Field Testing Services Manager
For and On Behalf of BHP Laboratories



Seamus O' Connell
Laboratory Technical Manager
Issue Date: 03/09/2021

Tested by BHP Laboratories, Limerick (c/o above address) Phone:(061) 455399 Fax:(061) 455447

This test report shall not be duplicated in full without the permission of the test laboratory.
Where the deformation does not exceed 1.25mm during the test, the CBR and K values have been estimated and are not included under our scope of accreditation.

			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID CBR03	
			Coordinates 713085.55 E 730695.00 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers				
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator			Elevation 46.17 mOD		Date: 03/09/2021			Logger: NP	
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water	
				45.82	0.35		TOPSOIL with grass		
							MADE GROUND: Stiff brown mottled grey sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse. Cobbles are subangular of limestone.		0.5
				44.67	1.50		Stiff brown slightly sandy gravelly CLAY with medium cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are subangular of limestone.		1.5
				43.97	2.20		Very stiff greyish brown slightly sandy slightly gravelly CLAY with pockets of grey fine to coarse sand. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone.		2.5
				43.17	3.00		End of trial pit at 3.00m		3.0
									3.5
									4.0
									4.5
Water Strikes			Remarks: No groundwater encountered.						
Struck at (m)		Remarks		Depth: 3.00 Width: 0.60 Length: 3.10		Termination Reason: Terminated at scheduled depth.		Last Updated 01/10/2021	
				Stability: Stable					

CBR TEST REPORT

Client: Causeway Geotech Ltd
8 Drumahiskey Rd,
Bendooragh,
Ballymoney
BT53 7QL
Northern Ireland
FAO: Mr. Sean Ross

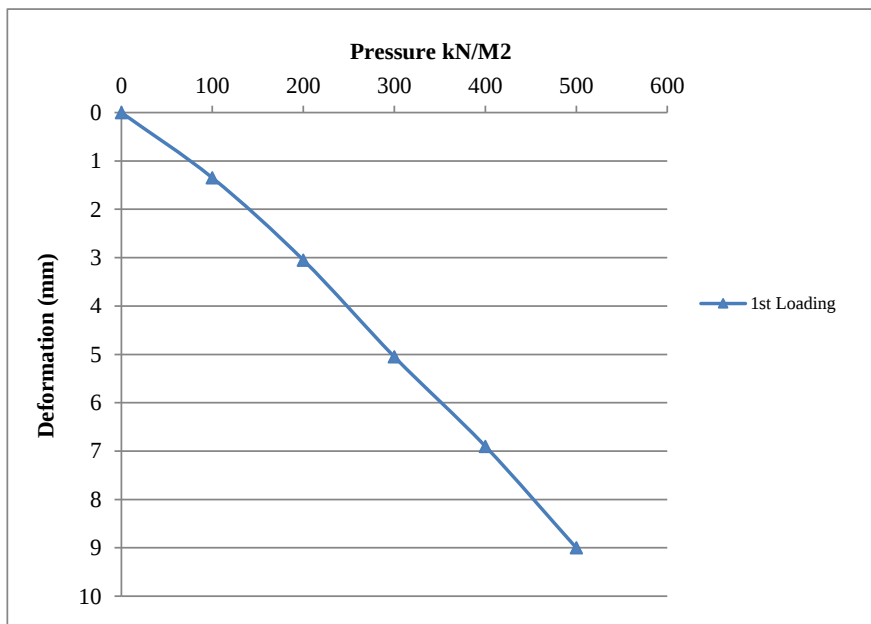
BHP Ref. No.: 21/09/028-3
Order No.: Not Supplied
Date Tested: 02/09/2021
Test Specification: Client Spec.
Item: Top Soil

Analysing
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Calibrating



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New Road
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Tel +353 61 455399
Fax +353 61 455447
E Mail jamespurcell@bhp.ie

Client Reference: Carlisle, Kimmage, Dublin.
Location Reference: Site CBR Test Location - Test 3
Type of Reaction Load: 14T
Plate Diameter: 450mm
BS 1377:Part 9:1990, Cl.4.1 (Plate Loading Test)



Bearing Pressure kN/m²	Plate Settlement (mm)
0	0
100	1.35
200	3.05
300	5.05
400	6.90
500	9.00

Maximum Applied Pressure (kN/m²)	500
Maximum Deformation (mm)	9.00
Estimated CBR % @ 1.25mm deformation	7
K= (KN/m²/m) @ 1.25mm deformation	46128

Remarks:

CBR calculated in accordance with Part 2 DMRB Volume 7 : Part 2 HD 25/94.
Time Recorded at each interval was 2 minutes.



Tony Hehir
Field Testing Services Manager
For and On Behalf of BHP Laboratories



Seamus O'Connell
Laboratory Technical Manager
Issue Date: 03/09/2021

Tested by BHP Laboratories, Limerick (c/o above address) Phone:(061) 455399 Fax:(061) 455447

This test report shall not be duplicated in full without the permission of the test laboratory.

Where the deformation does not exceed 1.25mm during the test, the CBR and K values have been estimated and are not included under our scope of accreditation.



CAUSEWAY
— GEOTECH

APPENDIX F
SOAKAWAY TEST RESULTS



			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID IF01	
			Coordinates 713006.66 E 730756.37 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers				
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator			Elevation 46.14 mOD		Date: 02/09/2021			Logger: RS	
Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description			Water
			45.84	0.30		TOPSOIL			
						MADE GROUND: Stiff brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are of limestone.			0.5
			44.94	1.20		End of trial pit at 1.20m			1.0
									1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
Water Strikes			Depth: 1.20 Width: 0.50 Length: 2.00		Remarks: No groundwater encountered.				
Struck at (m)	Remarks								
			Stability: Stable		Termination Reason: Terminated on refusal.			Last Updated 01/10/2021	

Soakaway Infiltration Test

Project No.: 21-0968
Site: Carlisle Development
Test Location: IF01
Test Date: 02 September 2021



*Analysis using method as described in BRE Digest 365
and CIRIA Report C697-The SUDS Manual*

width (m) length (m)
test pit top dimensions 0.50 2.00
test pit base dimensions 0.50 1.10
test pit depth (m) 1.20

depth to groundwater before adding water (m) = Dry

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	0.40	0.80
1	0.40	0.80
2	0.40	0.80
4	0.40	0.80
6	0.45	0.75
8	0.45	0.75
10	0.45	0.75
15	0.45	0.75
20	0.47	0.73
25	0.47	0.73
30	0.48	0.72
45	0.48	0.72
60	0.48	0.72
90	0.48	0.72
120	0.50	0.71
195	0.51	0.69
250	0.53	0.68
325	0.54	0.66
420	0.55	0.65

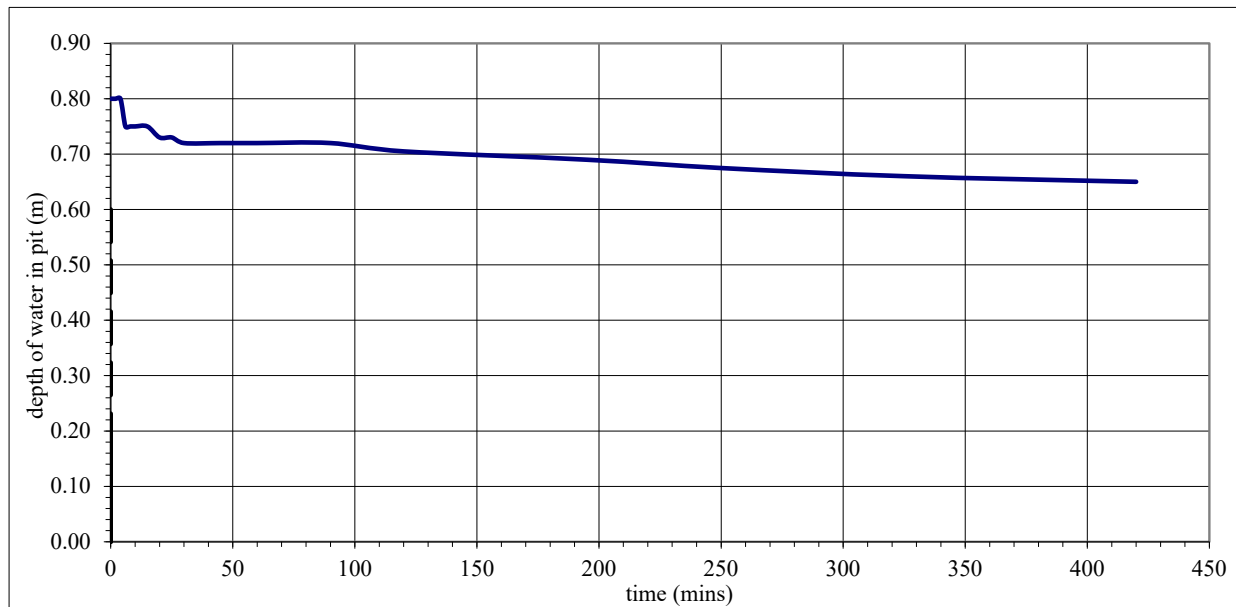
From graph below:

test start - 75% depth at
0.6 m water depth
time is not determined

test end - 25% depth at
0.2 m water depth
time is not determined

infiltration rate (q) is very low

time (mins)	depth to water (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m ³)	Area of walls and base at 50% drop (m ²)	q (m/min)	q (m/h)
	0.60	0.6					
	1.00	0.2					





21-0968

Carlisle Residential Development

IF02

713032.18 E

Lioncor

Barrett Mahony Consulting Engineers

Scale: 1:25

Trial Pitting

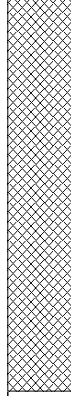
13T Tracked Excavator

46.68 mOD

02/09/2021

RS

FINAL

Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water
			46.48	0.20		TOPSOIL	
						MADE GROUND: Stiff brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are of limestone.	
			45.18	1.50		End of trial pit at 1.50m	

Water Strikes		Depth: 1.50 Width: 0.50 Length: 1.90	Remarks:		
Struck at (m)	Remarks		No groundwater encountered.		
			Stability:	Termination Reason:	Last Updated
		Stable	Terminated at scheduled depth.	01/10/2021	

Soakaway Infiltration Test

Project No.: 21-0968
Site: Carlisle Development
Test Location: IF02
Test Date: 02 September 2021



*Analysis using method as described in BRE Digest 365
and CIRIA Report C697-The SUDS Manual*

	width (m)	length (m)
test pit top dimensions	0.50	1.90
test pit base dimensions	0.50	0.80

test pit depth (m) 1.50

depth to groundwater before adding water (m) = Dry

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	0.50	1.00
1	0.53	0.97
2	0.55	0.96
4	0.57	0.93
6	0.59	0.92
8	0.60	0.91
10	0.61	0.89
15	0.64	0.86
20	0.66	0.84
30	0.70	0.81
45	0.75	0.75
60	0.80	0.71
90	0.83	0.68
135	0.87	0.63
175	0.91	0.60
215	0.94	0.57
285	0.98	0.53
380	1.02	0.48

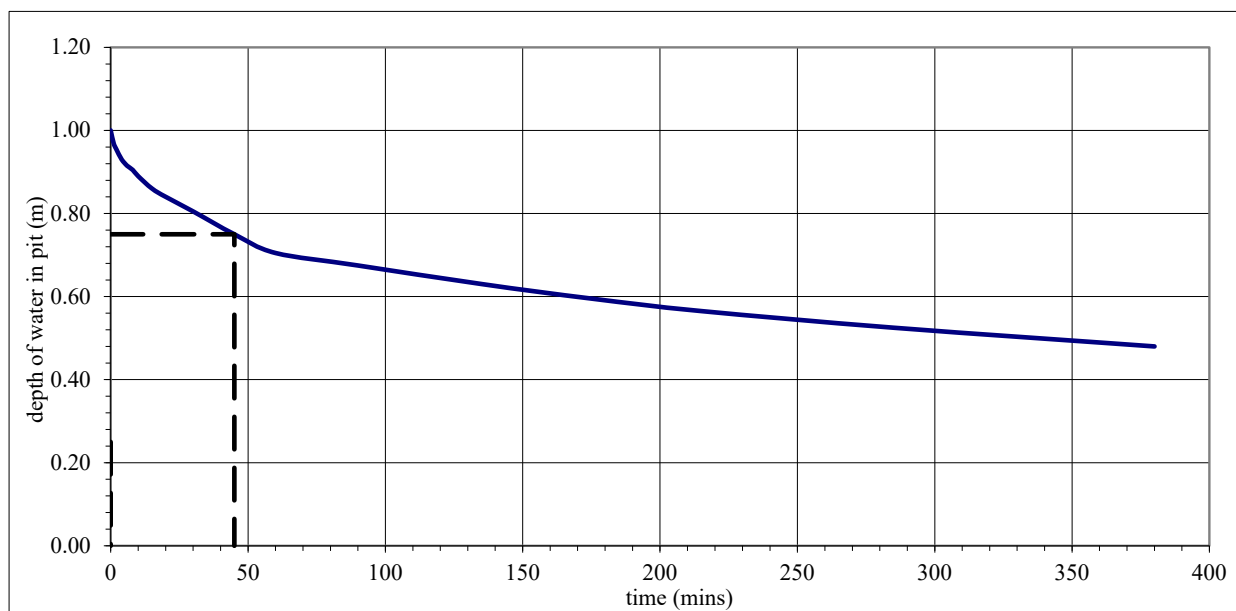
From graph below:

test start - 75% depth at
0.75 m water depth
time is 45.0 minutes

test end - 25% depth at
0.25 m water depth
time is not determined

infiltration rate (q) is very low

time (mins)	depth to water (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m ³)	Area of walls and base at 50% drop (m ²)	q (m/min)	q (m/h)
45	0.75	0.75					
	1.25	0.25					



 CAUSEWAY GEOTECH			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID IF03		
			Coordinates 713094.38 E 730712.23 N		Client: Lioncor					
Method: Trial Pitting			Client's Representative: Barrett Mahony Consulting Engineers			Sheet 1 of 1 Scale: 1:25				
Plant: 13T Tracked Excavator			Elevation 45.95 mOD		Date: 03/09/2021		Logger: NP		FINAL	
Depth (m)	Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description			Water	
			45.65	0.30		TOPSOIL with grass				
						Stiff brown very sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone. Cobbles are subangular of limestone.				0.5
			44.45	1.50		End of trial pit at 1.50m				1.0
										1.5
										2.0
										2.5
										3.0
										3.5
										4.0
										4.5
Water Strikes		Depth: 1.50 Width: 0.60 Length: 3.00	Remarks: No groundwater encountered.							
Struck at (m)	Remarks									
Stability: Stable		Termination Reason: Terminated at scheduled depth.			Last Updated 01/10/2021					

Soakaway Infiltration Test

Project No.: 21-0968
Site: Carlisle Development
Test Location: IF03
Test Date: 03 September 2021



*Analysis using method as described in BRE Digest 365
and CIRIA Report C697-The SUDS Manual*

width (m) length (m)
test pit top dimensions 0.60 3.00
test pit base dimensions 0.60 2.20
test pit depth (m) 1.50

depth to groundwater before adding water (m) = Dry

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	0.75	0.75
1	0.77	0.73
2	0.77	0.73
4	0.78	0.72
6	0.79	0.71
8	0.79	0.71
10	0.80	0.70
15	0.82	0.68
20	0.82	0.68
30	0.83	0.67
40	0.83	0.67
50	0.84	0.66
60	0.85	0.65
120	0.89	0.61

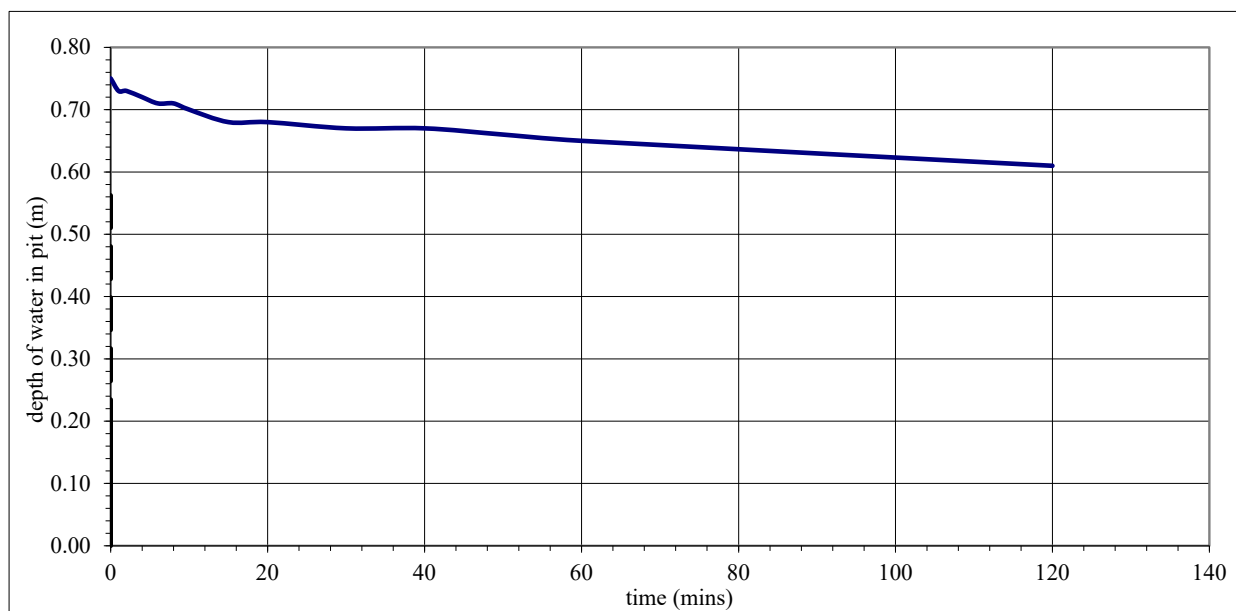
From graph below:

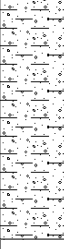
test start - 75% depth at
0.5625 m water depth
time is not determined

test end - 25% depth at
0.1875 m water depth
time is not determined

infiltration rate (q) is very low

time (mins)	depth to water (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m ³)	Area of walls and base at 50% drop (m ²)	q (m/min)	q (m/h)
	0.94	0.5625					
	1.31	0.1875					



			Project No. 21-0968		Project Name: Carlisle Residential Development			Trial Pit ID IF04	
			Coordinates 713097.52 E 730648.42 N		Client: Lioncor Client's Representative: Barrett Mahony Consulting Engineers				
Method: Trial Pitting								Sheet 1 of 1 Scale: 1:25	
Plant: 13T Tracked Excavator			Elevation 46.42 mOD		Date: 03/09/2021			Logger: NP	
Depth (m)		Sample / Tests	Field Records	Level (mOD)	Depth (m)	Legend	Description	Water	
				46.22	0.20		TOPSOIL with grass		
				45.72	0.70		MADE GROUND: Brown and grey slightly silty sandy subangular fine to coarse GRAVEL of limestone with medium cobble content and fragments of brick and metal. Sand is fine to coarse. Cobbles are subangular of limestone.		0.5
				44.92	1.50		Firm becoming stiff brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone.		1.0
							End of trial pit at 1.50m		1.5
									2.0
									2.5
									3.0
									3.5
									4.0
									4.5
Water Strikes			Depth: 1.50 Width: 0.60 Length: 2.10		Remarks: No groundwater encountered.				
Struck at (m)		Remarks		Stability: Stable		Termination Reason: Terminated at scheduled depth.		Last Updated 01/10/2021	
									

Soakaway Infiltration Test

Project No.: 21-0968
Site: Carlisle Development
Test Location: IF04
Test Date: 03 September 2021



*Analysis using method as described in BRE Digest 365
and CIRIA Report C697-The SUDS Manual*

width (m) length (m)

test pit top dimensions 0.60 2.10

test pit base dimensions 0.60 1.20

test pit depth (m) 1.50

depth to groundwater before adding water (m) = Dry

time (mins)	depth to water surface (m)	depth of water in pit (m)
0	0.50	1.00
1	0.51	0.99
2	0.52	0.98
3	0.54	0.96
4	0.55	0.95
5	0.56	0.94
6	0.57	0.93
7	0.58	0.92
8	0.59	0.91
9	0.59	0.91
10	0.60	0.90
15	0.62	0.88
20	0.64	0.86
30	0.65	0.85
40	0.65	0.85
50	0.69	0.81
60	0.71	0.79
120	0.70	0.80

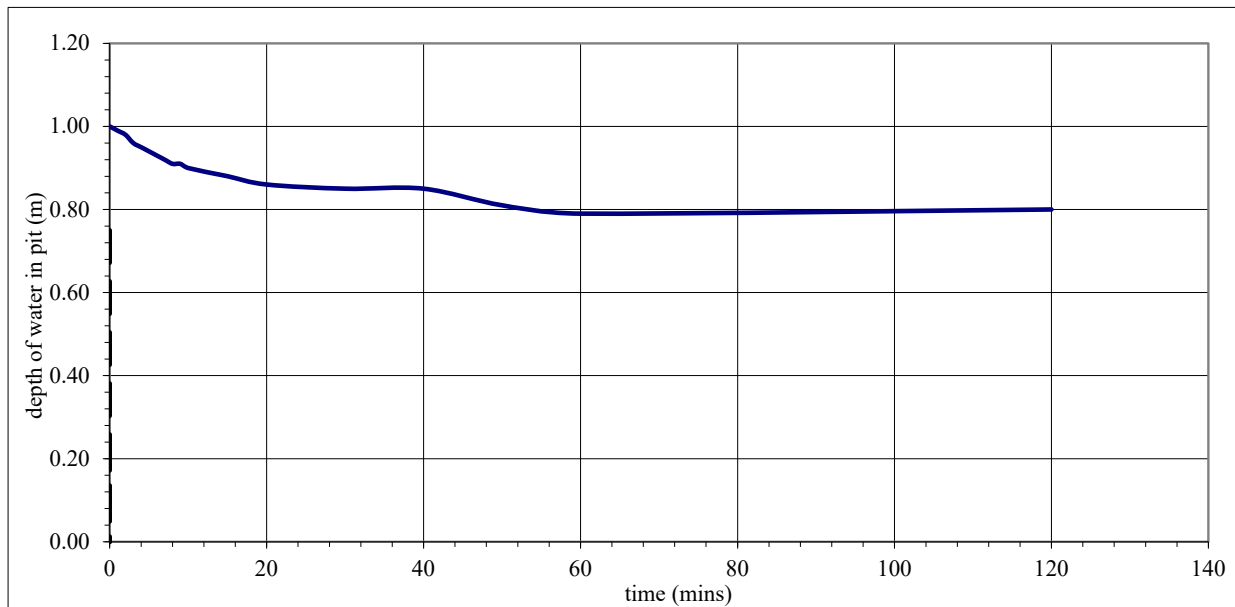
From graph below:

test start - 75% depth at
0.75 m water depth
time is not determined

test end - 25% depth at
0.25 m water depth
time is not determined

infiltration rate (q) is very low

time (mins)	depth to water (m)	depth of water in pit (m)	time elapsed (mins)	volume of water lost (m ³)	Area of walls and base at 50% drop (m ²)	q (m/min)	q (m/h)
	0.75	0.75					
	1.25	0.25					





CAUSEWAY
— GEOTECH

APPENDIX G
ENVIRONMENTAL LABORATORY TEST RESULTS





Final Report

Report No.: 21-30908-1

Initial Date of Issue: 16-Sep-2021

Client Causeway Geotech Ltd

Client Address: 8 Drumahiskey Road
Balnamore
Ballymoney
County Antrim
BT53 7QL

Contact(s): Carin Cornwall
Colm Hurley
Darren O'Mahony
Gabriella Horan
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John Cameron
Lucy Newland
Martin Gardiner
Matthew Gilbert
Michelle Gaffney
Neil Haggan
Paul Dunlop
Sean Ross
Stephen Franey
Stephen Watson
Stuart Abraham
Thomas McAllist

Project 21-0968 Carlisle Residential
Development, Kimmage

Quotation No.:	Date Received:	07-Sep-2021
Order No.:	Date Instructed:	08-Sep-2021
No. of Samples:		10
Turnaround (Wkdays):	Results Due:	16-Sep-2021
Date Approved:		16-Sep-2021

Approved By:

Details: Glynn Harvey, Technical Manager

Results - Leachate

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:					21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908
Quotation No.:	Chemtest Sample ID.:					1273912	1273913	1273914	1273915	1273916	1273917	1273918	1273919
Order No.:	Client Sample Ref.:					1	2	1	2	1	2	1	2
	Sample Location:					BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.5	1	0.5	1	0.5	1	0.5	1
	Date Sampled:					06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021
Determinand	Accred.	SOP	Type	Units	LOD								
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	< 0.050	0.062	0.083	0.059	< 0.050	0.090	0.083
Ammonium	N	1220	10:1	mg/kg	0.10	0.60	0.56	0.65	0.92	0.64	0.42	0.96	0.93

Results - Leachate

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:					21-30908	21-30908
Quotation No.:	Chemtest Sample ID.:					1273920	1273921
Order No.:	Client Sample Ref.:					1	2
	Sample Location:					BH05	BH05
	Sample Type:					SOIL	SOIL
	Top Depth (m):					0.5	1
	Date Sampled:					06-Sep-2021	06-Sep-2021
Determinand	Accred.	SOP	Type	Units	LOD		
Ammonium	U	1220	10:1	mg/l	0.050	0.10	0.073
Ammonium	N	1220	10:1	mg/kg	0.10	1.4	0.81

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908
Quotation No.:	Chemtest Sample ID.:				1273912	1273913	1273914	1273915	1273916	1273917	1273918	1273919	1273920
Order No.:	Client Sample Ref.:				1	2	1	2	1	2	1	2	1
	Sample Location:				BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04	BH05
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	1	0.5	1	0.5	1	0.5	1	0.5
	Date Sampled:				06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	17	11	15	9.2	13	7.5	13	10	4.7
pH	M	2010		4.0	9.0	9.2	8.7	9.1	8.8	9.3	8.9	9.1	9.2
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	2.2	0.47	1.5	< 0.40	1.2	< 0.40	1.3	< 0.40	< 0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0	31	5.5	< 1.0	5.0	3.5	3.0	< 1.0	4.4	< 1.0
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	1.1	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	1.8	1.7	1.6	3.3	3.3	3.5	3.3	3.3	3.3
Sulphate (Total)	M	2430	%	0.010	0.12	0.029	0.11	0.029	0.040	0.039	0.11	0.039	0.12
Arsenic	M	2450	mg/kg	1.0	27	16	19	12	11	22	26	19	23
Barium	M	2450	mg/kg	10	95	60	86	41	47	51	97	71	67
Cadmium	M	2450	mg/kg	0.10	1.6	2.7	1.5	1.8	1.3	2.3	1.7	2.0	3.2
Chromium	M	2450	mg/kg	1.0	23	19	20	14	14	17	22	21	26
Molybdenum	M	2450	mg/kg	2.0	4.3	6.2	3.8	2.6	2.6	4.1	4.0	4.3	4.3
Antimony	N	2450	mg/kg	2.0	2.7	7.3	4.3	2.7	2.2	2.5	5.7	2.8	< 2.0
Copper	M	2450	mg/kg	0.50	76	31	62	21	29	29	61	35	25
Mercury	M	2450	mg/kg	0.10	0.97	0.14	0.64	< 0.10	0.22	< 0.10	0.58	< 0.10	0.11
Nickel	M	2450	mg/kg	0.50	56	54	48	34	32	51	48	46	55
Lead	M	2450	mg/kg	0.50	170	21	160	17	59	20	120	95	38
Selenium	M	2450	mg/kg	0.20	0.94	0.49	0.60	0.27	0.44	0.31	0.80	< 0.20	0.70
Zinc	M	2450	mg/kg	0.50	130	94	110	50	64	74	160	70	74
Chromium (Trivalent)	N	2490	mg/kg	1.0	23	19	20	14	14	17	22	21	26
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	6.7	3.6	3.8	0.89	4.0	0.80	4.9	1.3	1.4
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	35	27	390	69	14	27	99	12	30
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	9.6	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	35	27	380	69	14	27	99	12	30
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	35	27	390	69	14	27	99	12	30
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908
Quotation No.:	Chemtest Sample ID.:				1273912	1273913	1273914	1273915	1273916	1273917	1273918	1273919	1273920
Order No.:	Client Sample Ref.:				1	2	1	2	1	2	1	2	1
	Sample Location:				BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04	BH05
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	1	0.5	1	0.5	1	0.5	1	0.5
	Date Sampled:				06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	31	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	130	88	43	29	73	79	61	41	55
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	160	88	43	29	73	79	61	41	55
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	200	120	430	98	86	110	160	53	84
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	1.1	< 0.10	0.60	< 0.10	< 0.10	< 0.10	0.59	< 0.10	1.1
Anthracene	M	2800	mg/kg	0.10	0.21	< 0.10	0.12	< 0.10	< 0.10	< 0.10	0.12	< 0.10	0.22
Fluoranthene	M	2800	mg/kg	0.10	1.4	< 0.10	0.85	< 0.10	< 0.10	< 0.10	0.85	< 0.10	0.94
Pyrene	M	2800	mg/kg	0.10	1.3	< 0.10	0.84	< 0.10	< 0.10	< 0.10	0.80	< 0.10	0.84
Benzo[a]anthracene	M	2800	mg/kg	0.10	0.74	< 0.10	0.48	< 0.10	< 0.10	< 0.10	0.50	< 0.10	0.53
Chrysene	M	2800	mg/kg	0.10	0.87	< 0.10	0.57	< 0.10	< 0.10	< 0.10	0.60	< 0.10	0.60
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	1.0	< 0.10	0.66	< 0.10	< 0.10	< 0.10	0.63	< 0.10	0.60
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	0.33	< 0.10	0.24	< 0.10	< 0.10	< 0.10	0.23	< 0.10	0.26
Benzo[a]pyrene	M	2800	mg/kg	0.10	0.71	< 0.10	0.47	< 0.10	< 0.10	< 0.10	0.46	< 0.10	0.38
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	0.48	< 0.10	0.37	< 0.10	< 0.10	< 0.10	0.32	< 0.10	0.30
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.14	< 0.10	0.13	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.13
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	0.48	< 0.10	0.39	< 0.10	< 0.10	< 0.10	0.33	< 0.10	0.30
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	8.8	< 2.0	5.7	< 2.0	< 2.0	< 2.0	5.4	< 2.0	6.2
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908	21-30908
Quotation No.:	Chemtest Sample ID.:				1273912	1273913	1273914	1273915	1273916	1273917	1273918	1273919	1273920
Order No.:	Client Sample Ref.:				1	2	1	2	1	2	1	2	1
	Sample Location:				BH01	BH01	BH02	BH02	BH03	BH03	BH04	BH04	BH05
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	1	0.5	1	0.5	1	0.5	1	0.5
	Date Sampled:				06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021	06-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
PCB 138	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.: 21-30908			
Quotation No.:	Chemtest Sample ID.: 1273921			
Order No.:	Client Sample Ref.: 2			
	Sample Location: BH05			
	Sample Type: SOIL			
	Top Depth (m): 1			
	Date Sampled: 06-Sep-2021			
	Asbestos Lab: DURHAM			
Determinand	Accred.	SOP	Units	LOD
ACM Type	U	2192		N/A
Asbestos Identification	U	2192		N/A
Moisture	N	2030	%	0.020
pH	M	2010		4.0
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0
Cyanide (Total)	M	2300	mg/kg	0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50
Sulphate (Total)	M	2430	%	0.010
Arsenic	M	2450	mg/kg	1.0
Barium	M	2450	mg/kg	10
Cadmium	M	2450	mg/kg	0.10
Chromium	M	2450	mg/kg	1.0
Molybdenum	M	2450	mg/kg	2.0
Antimony	N	2450	mg/kg	2.0
Copper	M	2450	mg/kg	0.50
Mercury	M	2450	mg/kg	0.10
Nickel	M	2450	mg/kg	0.50
Lead	M	2450	mg/kg	0.50
Selenium	M	2450	mg/kg	0.20
Zinc	M	2450	mg/kg	0.50
Chromium (Trivalent)	N	2490	mg/kg	1.0
Chromium (Hexavalent)	N	2490	mg/kg	0.50
Total Organic Carbon	M	2625	%	0.20
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-30908
Quotation No.:	Chemtest Sample ID.:				1273921
Order No.:	Client Sample Ref.:				2
	Sample Location:				BH05
	Sample Type:				SOIL
	Top Depth (m):				1
	Date Sampled:				06-Sep-2021
	Asbestos Lab:				DURHAM
Determinand	Accred.	SOP	Units	LOD	
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	72
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	72
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	86
Benzene	M	2760	µg/kg	1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10
Pyrene	M	2800	mg/kg	0.10	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0
PCB 28	U	2815	mg/kg	0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:		21-30908		
Quotation No.:	Chemtest Sample ID.:		1273921		
Order No.:	Client Sample Ref.:		2		
	Sample Location:		BH05		
	Sample Type:		SOIL		
	Top Depth (m):		1		
	Date Sampled:		06-Sep-2021		
	Asbestos Lab:		DURHAM		
Determinand	Accred.	SOP	Units	LOD	
PCB 138	U	2815	mg/kg	0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273912					Limits		
Sample Ref: 1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH01							
Top Depth(m): 0.5							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	6.7	3	5	6
Loss On Ignition	2610	M	%	13	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	200	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	8.8	100	--	--
pH	2010	M		9.0	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.013	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0016	0.016	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0088	0.088	0.5	10	70
Copper	1455	U	0.0034	0.034	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0047	0.047	0.5	10	30
Nickel	1455	U	0.0043	0.043	0.4	10	40
Lead	1455	U	0.0008	0.0080	0.5	10	50
Antimony	1455	U	0.0007	0.0069	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.45	4.5	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	100	1000	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	15	150	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Project: 21-30908 Canisio Residential Development, Kinnaird					Landfill Waste Acceptance Criteria		
Chemtest Job No: 21-30908					Limits		
Chemtest Sample ID: 1273913					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample Ref: 2							
Sample ID:							
Sample Location: BH01							
Top Depth(m): 1							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	3.6	3	5	6
Loss On Ignition	2610	M	%	4.1	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	120	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		9.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0090	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0093	0.093	0.5	10	70
Copper	1455	U	0.0010	0.010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0032	0.032	0.5	10	30
Nickel	1455	U	0.0043	0.043	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.42	4.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273914					Limits		
Sample Ref: 1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH02							
Top Depth(m): 0.5							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	3.8	3	5	6
Loss On Ignition	2610	M	%	11	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	430	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	5.7	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0090	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0021	0.021	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0088	0.088	0.5	10	70
Copper	1455	U	0.0048	0.048	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0064	0.064	0.5	10	30
Nickel	1455	U	0.0052	0.052	0.4	10	40
Lead	1455	U	0.0008	0.0077	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.39	3.9	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	22	220	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273915					Limits		
Sample Ref: 2					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH02							
Top Depth(m): 1							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.89	3	5	6
Loss On Ignition	2610	M	%	4.3	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	98	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		9.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0003	0.0034	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0087	0.087	0.5	10	70
Copper	1455	U	0.0014	0.014	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0064	0.064	0.5	10	30
Nickel	1455	U	0.0041	0.041	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.41	4.1	10	150	500
Sulphate	1220	U	2.8	28	1000	20000	50000
Total Dissolved Solids	1020	N	65	650	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	13	130	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	9.2

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273916					Limits		
Sample Ref: 1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH03							
Top Depth(m): 0.5							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	4.0	3	5	6
Loss On Ignition	2610	M	%	7.7	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	86	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0080	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0005	0.0045	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0088	0.088	0.5	10	70
Copper	1455	U	0.0013	0.013	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.015	0.15	0.5	10	30
Nickel	1455	U	0.0040	0.041	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0005	0.0052	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.45	4.5	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	59	580	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	14	140	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273917					Limits		
Sample Ref: 2					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH03							
Top Depth(m): 1							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.80	3	5	6
Loss On Ignition	2610	M	%	2.8	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	110	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		9.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.031	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0002	0.0021	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0089	0.089	0.5	10	70
Copper	1455	U	0.0006	0.0055	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0053	0.053	0.5	10	30
Nickel	1455	U	0.0041	0.041	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.40	4.0	10	150	500
Sulphate	1220	U	2.0	20	1000	20000	50000
Total Dissolved Solids	1020	N	58	580	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	8.1	81	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273918					Limits		
Sample Ref: 1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH04							
Top Depth(m): 0.5							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	4.9	3	5	6
Loss On Ignition	2610	M	%	9.6	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	160	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	5.4	100	--	--
pH	2010	M		8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.012	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0011	0.011	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0085	0.085	0.5	10	70
Copper	1455	U	0.0039	0.039	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0055	0.056	0.5	10	30
Nickel	1455	U	0.0050	0.050	0.4	10	40
Lead	1455	U	0.0007	0.0074	0.5	10	50
Antimony	1455	U	0.0008	0.0083	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.61	6.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	98	970	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	24	240	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273919					Limits		
Sample Ref: 2					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH04							
Top Depth(m): 1							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.3	3	5	6
Loss On Ignition	2610	M	%	3.1	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	53	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		9.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.019	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0081	0.081	0.5	10	70
Copper	1455	U	0.0005	0.0053	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0068	0.068	0.5	10	30
Nickel	1455	U	0.0039	0.039	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.32	3.2	10	150	500
Sulphate	1220	U	3.0	30	1000	20000	50000
Total Dissolved Solids	1020	N	57	570	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.6	76	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	10

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273920					Limits		
Sample Ref: 1					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH05							
Top Depth(m): 0.5							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.4	3	5	6
Loss On Ignition	2610	M	%	3.1	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	84	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	6.2	100	--	--
pH	2010	M		9.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.030	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0020	0.020	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.010	0.10	0.5	10	70
Copper	1455	U	0.0013	0.013	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0076	0.076	0.5	10	30
Nickel	1455	U	0.0040	0.040	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.29	2.9	10	150	500
Sulphate	1220	U	6.8	68	1000	20000	50000
Total Dissolved Solids	1020	N	55	550	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	11	110	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	4.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-30908					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1273921					Limits		
Sample Ref: 2					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: BH05							
Top Depth(m): 1							
Bottom Depth(m):							
Sampling Date: 06-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	2.8	3	5	6
Loss On Ignition	2610	M	%	6.6	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	86	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0004	0.0035	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0084	0.084	0.5	10	70
Copper	1455	U	0.0016	0.016	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0037	0.037	0.5	10	30
Nickel	1455	U	0.0041	0.041	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.34	3.4	10	150	500
Sulphate	1220	U	15	150	1000	20000	50000
Total Dissolved Solids	1020	N	98	970	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 21-31046-1

Initial Date of Issue: 20-Sep-2021

Client Causeway Geotech Ltd

Client Address: 8 Drumahiskey Road
Balnamore
Ballymoney
County Antrim
BT53 7QL

Contact(s): Carin Cornwall
Colm Hurley
Darren O'Mahony
Gabriella Horan
Joe Gervin
John Cameron
Lucy Newland
Martin Gardiner
Matthew Gilbert
Michelle Gaffney
Neil Haggan
Paul Dunlop
Sean Ross
Stephen Franey
Stephen Watson
Stuart Abraham
Thomas McAllist

Project 21-0968 Carlisle Residential
Development, Kimmage

Quotation No.:		Date Received:	08-Sep-2021
Order No.:		Date Instructed:	10-Sep-2021
No. of Samples:	4		
Turnaround (Wkdays):	7	Results Due:	20-Sep-2021
Date Approved:	20-Sep-2021		

Approved By:

Details: Glynn Harvey, Technical Manager

Results - Leachate

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:					21-31046	21-31046	21-31046	21-31046
Quotation No.:	Chemtest Sample ID.:					1274583	1274584	1274585	1274586
	Sample Location:					TP07	TP07	TP08	TP08
	Sample Type:					SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.5	1	0.5	1
	Date Sampled:					03-Sep-2021	03-Sep-2021	03-Sep-2021	03-Sep-2021
Determinand	Accred.	SOP	Type	Units	LOD				
Ammonium	U	1220	10:1	mg/l	0.050	0.16	0.12	0.071	0.071
Ammonium	N	1220	10:1	mg/kg	0.10	1.7	1.3	0.76	0.76

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31046	21-31046	21-31046	21-31046
Quotation No.:	Chemtest Sample ID.:				1274583	1274584	1274585	1274586
	Sample Location:				TP07	TP07	TP08	TP08
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	1	0.5	1
	Date Sampled:				03-Sep-2021	03-Sep-2021	03-Sep-2021	03-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	17	13	13	15
pH	M	2010		4.0	9.2	9.0	9.0	8.9
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	< 0.40	0.40	< 0.40	3.3
Sulphur (Elemental)	M	2180	mg/kg	1.0	< 1.0	1.4	< 1.0	< 1.0
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	2.0	3.0	3.0	2.0
Sulphate (Total)	M	2430	%	0.010	0.036	0.042	0.050	0.015
Arsenic	M	2450	mg/kg	1.0	14	11	15	11
Barium	M	2450	mg/kg	10	62	40	56	44
Cadmium	M	2450	mg/kg	0.10	2.3	1.3	2.1	1.8
Chromium	M	2450	mg/kg	1.0	19	13	20	16
Molybdenum	M	2450	mg/kg	2.0	3.6	2.5	3.9	3.1
Antimony	N	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	M	2450	mg/kg	0.50	59	44	47	60
Mercury	M	2450	mg/kg	0.10	0.12	0.13	0.13	0.16
Nickel	M	2450	mg/kg	0.50	63	42	65	53
Lead	M	2450	mg/kg	0.50	33	29	27	20
Selenium	M	2450	mg/kg	0.20	0.48	0.30	0.86	0.59
Zinc	M	2450	mg/kg	0.50	100	74	99	83
Chromium (Trivalent)	N	2490	mg/kg	1.0	19	13	20	16
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	1.3	1.8	1.4	1.0
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31046	21-31046	21-31046	21-31046
Quotation No.:	Chemtest Sample ID.:				1274583	1274584	1274585	1274586
	Sample Location:				TP07	TP07	TP08	TP08
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	1	0.5	1
	Date Sampled:				03-Sep-2021	03-Sep-2021	03-Sep-2021	03-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD				
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31046	21-31046	21-31046	21-31046
Quotation No.:	Chemtest Sample ID.:				1274583	1274584	1274585	1274586
	Sample Location:				TP07	TP07	TP08	TP08
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	1	0.5	1
	Date Sampled:				03-Sep-2021	03-Sep-2021	03-Sep-2021	03-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD				
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31046					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1274583					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP07							
Top Depth(m): 0.5							
Bottom Depth(m):							
Sampling Date: 03-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.3	3	5	6
Loss On Ignition	2610	M	%	4.6	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		9.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0003	0.0030	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0045	0.045	0.5	10	70
Copper	1455	U	0.0020	0.020	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0056	0.056	0.5	10	30
Nickel	1455	U	0.0026	0.027	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.47	4.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	160	1600	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	13	130	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	17

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31046					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1274584					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP07							
Top Depth(m): 1							
Bottom Depth(m):							
Sampling Date: 03-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.8	3	5	6
Loss On Ignition	2610	M	%	4.7	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		9.0	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0070	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0003	0.0031	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0046	0.046	0.5	10	70
Copper	1455	U	0.0030	0.030	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0065	0.065	0.5	10	30
Nickel	1455	U	0.0025	0.026	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	0.0006	0.0056	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.46	4.6	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	85	840	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	13	130	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31046					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1274585					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP08							
Top Depth(m): 0.5							
Bottom Depth(m):							
Sampling Date: 03-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.4	3	5	6
Loss On Ignition	2610	M	%	3.4	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		9.0	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0045	0.045	0.5	10	70
Copper	1455	U	0.0016	0.016	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0039	0.039	0.5	10	30
Nickel	1455	U	0.0023	0.023	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.40	4.0	10	150	500
Sulphate	1220	U	2.8	28	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	13	130	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31046					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1274586					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP08							
Top Depth(m): 1							
Bottom Depth(m):							
Sampling Date: 03-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.0	3	5	6
Loss On Ignition	2610	M	%	3.3	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0030	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0003	0.0025	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0056	0.056	0.5	10	70
Copper	1455	U	0.0018	0.018	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0027	0.027	0.5	10	30
Nickel	1455	U	0.0028	0.028	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.33	3.3	10	150	500
Sulphate	1220	U	1.7	17	1000	20000	50000
Total Dissolved Solids	1020	N	58	580	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	11	110	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	15

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



Final Report

Report No.: 21-31392-1

Initial Date of Issue: 22-Sep-2021

Client Causeway Geotech Ltd

Client Address: 8 Drumahiskey Road
Balnamore
Ballymoney
County Antrim
BT53 7QL

Contact(s): Carin Cornwall
Colm Hurley
Darren O'Mahony
Gabriella Horan
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John Cameron
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Martin Gardiner
Matthew Gilbert
Michelle Gaffney
Neil Haggan
Paul Dunlop
Sean Ross
Stephen Franey
Stephen Watson
Stuart Abraham
Thomas McAllist

Project 21-0968 Carlisle Residential
Development, Kimmage

Quotation No.:	Date Received:	10-Sep-2021
Order No.:	Date Instructed:	14-Sep-2021
No. of Samples:		12
Turnaround (Wkdays):	Results Due:	22-Sep-2021
Date Approved:		22-Sep-2021

Approved By:

Details: Glynn Harvey, Technical Manager

Results - Leachate

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:					21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:					1276275	1276276	1276277	1276278	1276279	1276280	1276281	1276282
	Sample Location:					TP01	TP01	TP02	TP02	TP03	TP03	TP04	TP04
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.50	1.00	0.50	1.00	0.50	1.00	0.50	1.00
	Date Sampled:					02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021
Determinand	Accred.	SOP	Type	Units	LOD								
Ammonium	U	1220	10:1	mg/l	0.050	0.12	0.28	0.16	0.22	0.25	0.12	0.068	0.10
Ammonium	N	1220	10:1	mg/kg	0.10	1.5	4.3	2.0	2.9	3.8	1.6	0.82	1.4

Results - Leachate

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:					21-31392	21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:					1276283	1276284	1276285	1276286
	Sample Location:					TP05	TP05	TP06	TP06
	Sample Type:					SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.50	1.00	0.50	1.00
	Date Sampled:					02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021
Determinand	Accred.	SOP	Type	Units	LOD				
Ammonium	U	1220	10:1	mg/l	0.050	0.20	0.072	0.17	0.24
Ammonium	N	1220	10:1	mg/kg	0.10	2.3	0.84	2.0	3.0

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:				1276275	1276276	1276277	1276278	1276279	1276280	1276281	1276282	1276283
	Sample Location:				TP01	TP01	TP02	TP02	TP03	TP03	TP04	TP04	TP05
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	1.00	0.50	1.00	0.50	1.00	0.50	1.00	0.50
	Date Sampled:				02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	11	6.1	9.9	7.3	7.7	7.4	8.8	7.3	7.7
pH	M	2010		4.0	8.7	8.8	8.8	8.8	8.9	8.9	8.7	8.9	8.6
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	0.59	< 0.40	0.54	< 0.40	< 0.40	< 0.40	0.42	< 0.40	< 0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0	< 1.0	< 1.0	1.7	< 1.0	1.5	< 1.0	< 1.0	< 1.0	2.6
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	0.66	1.5	3.9	1.9	5.2	3.1	0.77	4.4	0.99
Sulphate (Total)	M	2430	%	0.010	0.032	0.058	0.056	0.041	0.040	0.044	0.014	0.048	0.064
Arsenic	M	2450	mg/kg	1.0	12	15	18	19	11	15	9.8	14	15
Barium	M	2450	mg/kg	10	58	42	80	53	36	55	62	62	68
Cadmium	M	2450	mg/kg	0.10	1.9	2.0	2.3	2.4	1.2	2.0	1.7	2.0	1.5
Chromium	M	2450	mg/kg	1.0	17	12	19	16	10	12	17	15	17
Molybdenum	M	2450	mg/kg	2.0	2.7	3.7	4.3	4.5	2.4	3.6	2.5	3.5	3.6
Antimony	N	2450	mg/kg	2.0	< 2.0	4.1	3.1	2.6	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	M	2450	mg/kg	0.50	40	56	65	38	24	33	36	32	56
Mercury	M	2450	mg/kg	0.10	0.22	0.11	0.39	0.11	0.17	< 0.10	0.10	< 0.10	0.31
Nickel	M	2450	mg/kg	0.50	46	40	61	57	30	46	43	45	43
Lead	M	2450	mg/kg	0.50	37	23	69	23	29	18	19	20	87
Selenium	M	2450	mg/kg	0.20	0.50	0.33	0.70	0.39	0.23	< 0.20	0.64	< 0.20	0.80
Zinc	M	2450	mg/kg	0.50	89	66	97	80	48	63	86	64	94
Chromium (Trivalent)	N	2490	mg/kg	1.0	17	12	19	16	10	12	17	15	17
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	1.1	0.30	1.8	0.33	0.91	0.29	0.75	1.4	4.2
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:				1276275	1276276	1276277	1276278	1276279	1276280	1276281	1276282	1276283
	Sample Location:				TP01	TP01	TP02	TP02	TP03	TP03	TP04	TP04	TP05
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	1.00	0.50	1.00	0.50	1.00	0.50	1.00	0.50
	Date Sampled:				02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	2.6	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	1.5	< 0.10	2.9	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.27	< 0.10	0.44	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	0.12	< 0.10	1.8	< 0.10	2.3	< 0.10	< 0.10	< 0.10	0.20
Pyrene	M	2800	mg/kg	0.10	0.20	< 0.10	1.5	< 0.10	2.0	< 0.10	< 0.10	< 0.10	0.22
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.66	< 0.10	0.87	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.64	< 0.10	1.0	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.83	< 0.10	0.97	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.30	< 0.10	0.34	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.55	< 0.10	0.69	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.42	< 0.10	0.49	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	0.17	< 0.10	0.14	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	0.45	< 0.10	0.50	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	9.1	< 2.0	13	< 2.0	< 2.0	< 2.0	< 2.0
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:				1276275	1276276	1276277	1276278	1276279	1276280	1276281	1276282	1276283
	Sample Location:				TP01	TP01	TP02	TP02	TP03	TP03	TP04	TP04	TP05
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.50	1.00	0.50	1.00	0.50	1.00	0.50	1.00	0.50
	Date Sampled:				02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021	02-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD									
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:				1276284	1276285	1276286
	Sample Location:				TP05	TP06	TP06
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				1.00	0.50	1.00
	Date Sampled:				02-Sep-2021	02-Sep-2021	02-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
ACM Type	U	2192		N/A	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	8.5	7.5	6.3
pH	M	2010		4.0	8.8	8.7	8.9
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	< 0.40	0.63	< 0.40
Sulphur (Elemental)	M	2180	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	0.91	2.3	3.1
Sulphate (Total)	M	2430	%	0.010	0.022	0.042	0.044
Arsenic	M	2450	mg/kg	1.0	12	12	13
Barium	M	2450	mg/kg	10	49	56	52
Cadmium	M	2450	mg/kg	0.10	1.9	1.5	1.7
Chromium	M	2450	mg/kg	1.0	15	16	12
Molybdenum	M	2450	mg/kg	2.0	2.7	2.3	3.2
Antimony	N	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0
Copper	M	2450	mg/kg	0.50	32	34	29
Mercury	M	2450	mg/kg	0.10	0.10	0.13	< 0.10
Nickel	M	2450	mg/kg	0.50	48	39	41
Lead	M	2450	mg/kg	0.50	19	28	16
Selenium	M	2450	mg/kg	0.20	0.47	0.40	< 0.20
Zinc	M	2450	mg/kg	0.50	80	73	58
Chromium (Trivalent)	N	2490	mg/kg	1.0	15	16	12
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	0.80	1.0	0.90
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:				1276284	1276285	1276286
	Sample Location:				TP05	TP06	TP06
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				1.00	0.50	1.00
	Date Sampled:				02-Sep-2021	02-Sep-2021	02-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: 21-0968 Carlisle Residential Development, Kimmage

Client: Causeway Geotech Ltd	Chemtest Job No.:				21-31392	21-31392	21-31392
Quotation No.:	Chemtest Sample ID.:				1276284	1276285	1276286
	Sample Location:				TP05	TP06	TP06
	Sample Type:				SOIL	SOIL	SOIL
	Top Depth (m):				1.00	0.50	1.00
	Date Sampled:				02-Sep-2021	02-Sep-2021	02-Sep-2021
	Asbestos Lab:				DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD			
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10	< 0.10	< 0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276275					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP01							
Top Depth(m): 0.50							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.1	3	5	6
Loss On Ignition	2610	M	%	90	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.010	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0006	0.0057	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0012	0.012	0.5	10	70
Copper	1455	U	0.0021	0.021	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0058	0.058	0.5	10	30
Nickel	1455	U	0.0013	0.013	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.40	4.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	15	150	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276276					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP01							
Top Depth(m): 1.00							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.30	3	5	6
Loss On Ignition	2610	M	%	2.9	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.034	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0031	0.031	0.5	10	30
Nickel	1455	U	0.0006	0.0062	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	48	470	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.9	69	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	6.1

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276277					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP02							
Top Depth(m): 0.50							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.8	3	5	6
Loss On Ignition	2610	M	%	5.9	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	9.1	100	--	--
pH	2010	M		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0003	0.0032	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0010	0.010	0.5	10	70
Copper	1455	U	0.0012	0.012	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0048	0.048	0.5	10	30
Nickel	1455	U	0.0008	0.0083	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.41	4.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	9.9

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276278					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP02							
Top Depth(m): 1.00							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.33	3	5	6
Loss On Ignition	2610	M	%	2.9	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.037	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0007	0.0074	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0069	0.069	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.34	3.4	10	150	500
Sulphate	1220	U	1.1	11	1000	20000	50000
Total Dissolved Solids	1020	N	59	590	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.3	73	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276279					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP03							
Top Depth(m): 0.50							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.91	3	5	6
Loss On Ignition	2610	M	%	3.5	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	13	100	--	--
pH	2010	M		8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.048	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0003	0.0032	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	0.0085	0.5	10	70
Copper	1455	U	0.0008	0.0079	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0066	0.066	0.5	10	30
Nickel	1455	U	0.0008	0.0084	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.1	11	800	15000	25000
Fluoride	1220	U	0.28	2.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	48	480	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.7	77	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276280					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP03							
Top Depth(m): 1.00							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.29	3	5	6
Loss On Ignition	2610	M	%	2.3	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.045	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0002	0.0020	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0005	0.0055	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0066	0.066	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	1.2	12	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	65	650	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.3	63	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.4

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276281					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP04							
Top Depth(m): 0.50							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.75	3	5	6
Loss On Ignition	2610	M	%	3.2	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.028	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0006	0.0060	0.5	10	70
Copper	1455	U	0.0005	0.0055	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0027	0.027	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.58	5.8	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	58	580	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	11	110	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	8.8

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276282					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP04							
Top Depth(m): 1.00							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.4	3	5	6
Loss On Ignition	2610	M	%	2.0	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.053	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0099	0.099	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.46	4.6	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	52	520	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.5	75	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	7.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276283					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP05							
Top Depth(m): 0.50							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	4.2	3	5	6
Loss On Ignition	2610	M	%	8.0	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.024	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0006	0.0060	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0007	0.0074	0.5	10	70
Copper	1455	U	0.0029	0.029	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0055	0.055	0.5	10	30
Nickel	1455	U	0.0009	0.0091	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	0.0005	0.0052	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.70	7.0	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	720	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	17	170	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	7.7

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276284					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP05							
Top Depth(m): 1.00							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.80	3	5	6
Loss On Ignition	2610	M	%	3.5	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0005	0.0055	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0038	0.038	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.41	4.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	11	110	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	8.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276285					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP06							
Top Depth(m): 0.50							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	1.0	3	5	6
Loss On Ignition	2610	M	%	3.9	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.020	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	0.0002	0.0021	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	0.0013	0.013	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0048	0.048	0.5	10	30
Nickel	1455	U	0.0006	0.0064	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.54	5.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	12	120	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	7.5

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 21-0968 Carlisle Residential Development, Kimmage

Chemtest Job No: 21-31392					Landfill Waste Acceptance Criteria		
Chemtest Sample ID: 1276286					Limits		
Sample Ref:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Sample ID:							
Sample Location: TP06							
Top Depth(m): 1.00							
Bottom Depth(m):							
Sampling Date: 02-Sep-2021							
Determinand	SOP	Accred.	Units				
Total Organic Carbon	2625	M	%	0.90	3	5	6
Loss On Ignition	2610	M	%	2.1	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		8.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.033	--	To evaluate	To evaluate
Eluate Analysis			10:1 Eluate mg/l	10:1 Eluate mg/kg	Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0005	0.0054	0.5	10	70
Copper	1455	U	0.0008	0.0078	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0089	0.089	0.5	10	30
Nickel	1455	U	0.0007	0.0066	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	0.006	0.064	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.41	4.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	61	600	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	8.0	80	500	800	1000

Solid Information

Dry mass of test portion/kg	0.090
Moisture (%)	6.3

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N-dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



CAUSEWAY
— GEOTECH

APPENDIX H
SPT HAMMER ENERGY MEASUREMENT REPORT



SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwood Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: 0200
Test Date: 27/02/2021
Report Date: 01/03/2021
File Name: 0200.spt
Test Operator: NPB

Instrumented Rod Data

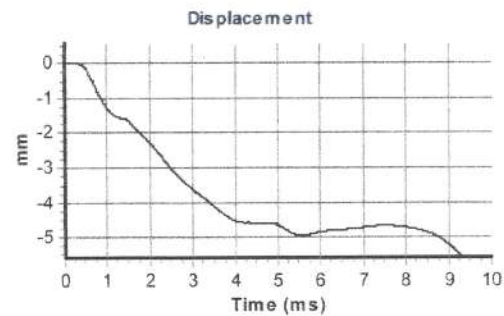
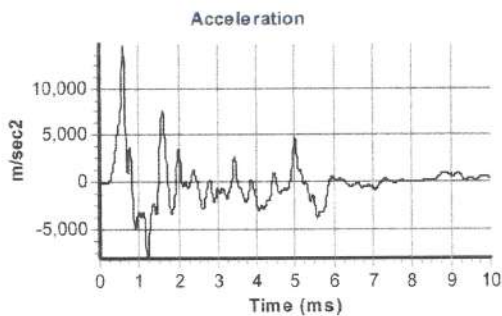
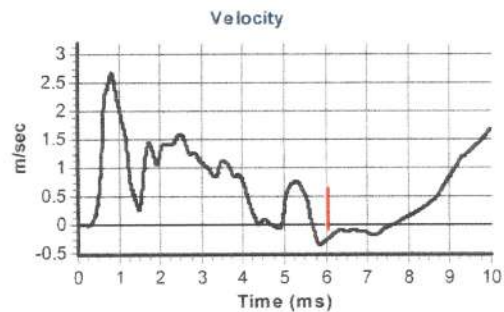
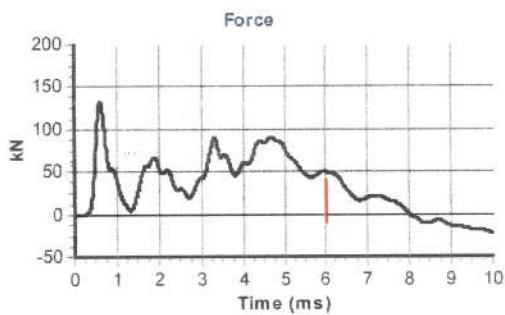
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.3
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 6458
Accelerometer No.2: 9607

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 11.0

Comments / Location

BALLYMONEY



Calculations

Area of Rod A (mm²): 944
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 282

Energy Ratio E_r (%): **60**

N P Burrows

Signed: N P Burrows
Title: Field Operations Manager

The recommended calibration interval is 12 months

SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

Southern Testing
Unit 11
Charlwood Road
East Grinstead
West Sussex
RH19 2HU

SPT Hammer Ref: T1.
Test Date: 27/02/2021
Report Date: 01/03/2021
File Name: T1..spt
Test Operator: NPB

Instrumented Rod Data

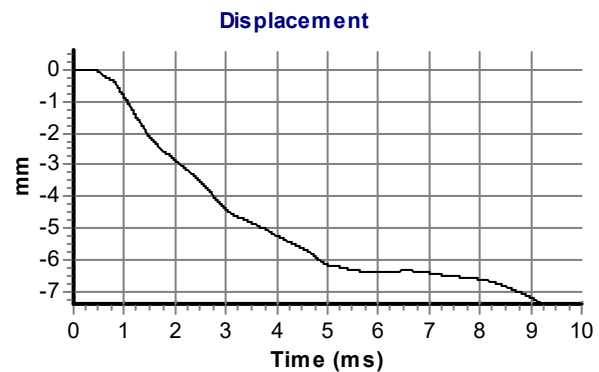
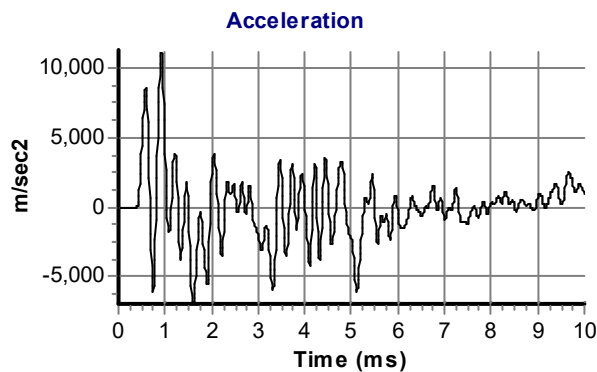
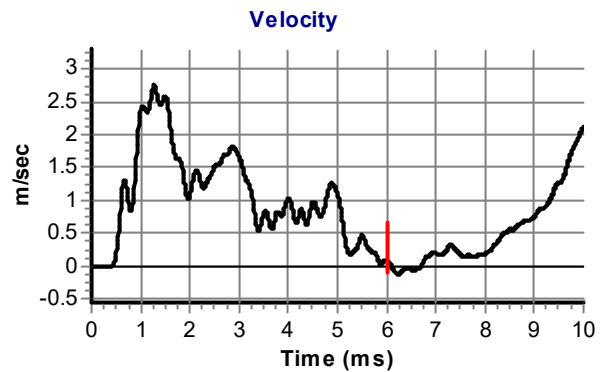
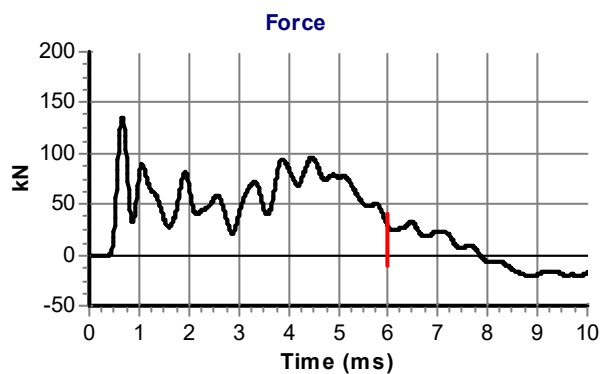
Diameter d_r (mm): 54
Wall Thickness t_r (mm): 6.3
Assumed Modulus E_a (GPa): 208
Accelerometer No.1: 6458
Accelerometer No.2: 9607

SPT Hammer Information

Hammer Mass m (kg): 63.5
Falling Height h (mm): 760
SPT String Length L (m): 11.0

Comments / Location

BALLYMONEY



Calculations

Area of Rod A (mm²): 944
Theoretical Energy E_{theor} (J): 473
Measured Energy E_{meas} (J): 409

Energy Ratio E_r (%): **86**

N P Burrows

Signed: N P Burrows

Title: Field Operations Manager

The recommended calibration interval is 12 months



CAUSEWAY
— GEOTECH

APPENDIX I

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:

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



F21NP-62I2D-X5J95

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

Job name

Carlisle Development

Description/Comments

Waste Classification run on samples taken during ground investigation works in August 2021

Project

21-0968

Site

Carlisle Development

Classified by

Name: **Sean Ross**
 Date: **23 Sep 2021 08:42 GMT**
 Telephone:
 Company: **Causeway Geotech Ltd**
Unit 1 Fingal House, Stephenstown
Industrial Estate,
Balbriggan
K32 VR66

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:

Course
 Hazardous Waste Classification

Date
 50% complete

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
1	BH01-1-06/09/2021-0.5	0.5	Non Hazardous		Fail	Fail	3
2	BH01-2-06/09/2021-1	1	Non Hazardous		Fail	Pass	7
3	BH02-1-06/09/2021-0.5	0.5	Non Hazardous		Fail	Pass	11
4	BH02-2-06/09/2021-1	1	Non Hazardous		Pass	Pass	15
5	BH03-1-06/09/2021-0.5	0.5	Non Hazardous		Fail	Pass	19
6	BH03-2-06/09/2021-1	1	Non Hazardous		Pass	Pass	23
7	BH04-1-06/09/2021-0.5	0.5	Non Hazardous		Fail	Pass	27
8	BH04-2-06/09/2021-1	1	Non Hazardous		Pass	Pass	31
9	BH05-1-06/09/2021-0.5	0.5	Non Hazardous		Pass	Pass	35
10	BH05-2-06/09/2021-1	1	Non Hazardous		Pass	Pass	39
11	TP07-03/09/2021-0.5	0.5	Non Hazardous		Pass	Pass	43
12	TP07-03/09/2021-1	1	Non Hazardous		Pass	Pass	47
13	TP08-03/09/2021-0.5	0.5	Non Hazardous		Pass	Pass	51
14	TP08-03/09/2021-1	1	Non Hazardous		Pass	Pass	55
15	TP01-02/09/2021-0.50	0.50	Non Hazardous		Pass	Pass	59
16	TP01-02/09/2021-1.00	1.00	Non Hazardous		Pass	Pass	63
17	TP02-02/09/2021-0.50	0.50	Non Hazardous		Pass	Pass	67
18	TP02-02/09/2021-1.00	1.00	Non Hazardous		Pass	Pass	71
19	TP03-02/09/2021-0.50	0.50	Non Hazardous		Pass	Pass	75
20	TP03-02/09/2021-1.00	1.00	Non Hazardous		Fail	Pass	79
21	TP04-02/09/2021-0.50	0.50	Non Hazardous		Pass	Pass	83
22	TP04-02/09/2021-1.00	1.00	Non Hazardous		Pass	Pass	87
23	TP05-02/09/2021-0.50	0.50	Non Hazardous		Fail	Pass	91
24	TP05-02/09/2021-1.00	1.00	Non Hazardous		Pass	Pass	95
25	TP06-02/09/2021-0.50	0.50	Non Hazardous		Pass	Pass	99
26	TP06-02/09/2021-1.00	1.00	Non Hazardous		Pass	Pass	103

Related documents

#	Name	Description
1	Carlisle Development.BATCH	.batch file used to create the Job
2	HWOL_21-30908-20210916 174524.hwol	.hwol file used to create the Job
3	HWOL_21-31046-20210920 183230.hwol	.hwol file used to create the Job
4	HWOL_21-31392-20210922 190651.hwol	.hwol file used to create the Job
5	Example waste stream template for contaminated soils	waste stream template used to create this Job

WAC results

WAC Settings: samples in this Job do not 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: Sean Ross

Created date: 23 Sep 2021 08:42 GMT

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	107
Appendix B: Rationale for selection of metal species	108
Appendix C: Version	109

Classification of sample: BH01-1-06/09/2021-0.5

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

Sample details

Sample name:	LoW Code:
BH01-1-06/09/2021-0.5	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
17%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.7	mg/kg	1.197	2.683	mg/kg	0.000268 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				27	mg/kg	1.32	29.588	mg/kg	0.00296 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				2.2	mg/kg	3.22	5.879	mg/kg	0.000588 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				1.6	mg/kg	1.142	1.517	mg/kg	0.000152 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23	mg/kg	1.462	27.901	mg/kg	0.00279 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				76	mg/kg	1.126	71.021	mg/kg	0.0071 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	170	mg/kg	1.56	220.09	mg/kg	0.0141 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.97	mg/kg	1.353	1.09	mg/kg	0.000109 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				4.3	mg/kg	1.5	5.354	mg/kg	0.000535 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				56	mg/kg	2.976	138.337	mg/kg	0.0138 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.94	mg/kg	2.554	1.993	mg/kg	0.000199 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				130	mg/kg	2.774	299.33	mg/kg	0.0299 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				200	mg/kg		166	mg/kg	0.0166 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				9 pH		9 pH	9pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				1.1 mg/kg		0.913 mg/kg	0.0000913 %		✓	
		201-581-5	85-01-8								
27	anthracene				0.21 mg/kg		0.174 mg/kg	0.0000174 %		✓	
		204-371-1	120-12-7								
28	fluoranthene				1.4 mg/kg		1.162 mg/kg	0.000116 %		✓	
		205-912-4	206-44-0								
29	pyrene				1.3 mg/kg		1.079 mg/kg	0.000108 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				0.74 mg/kg		0.614 mg/kg	0.0000614 %		✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				0.87 mg/kg		0.722 mg/kg	0.0000722 %		✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				1 mg/kg		0.83 mg/kg	0.000083 %		✓	
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				0.33 mg/kg		0.274 mg/kg	0.0000274 %		✓	
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				0.71 mg/kg		0.589 mg/kg	0.0000589 %		✓	
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				0.48 mg/kg		0.398 mg/kg	0.0000398 %		✓	
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				0.14 mg/kg		0.116 mg/kg	0.0000116 %		✓	
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				0.48 mg/kg		0.398 mg/kg	0.0000398 %		✓	
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				31 mg/kg		25.73 mg/kg	0.00257 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				95 mg/kg	1.233	97.261 mg/kg	0.00973 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.102 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0166%)

WAC results for sample: BH01-1-06/09/2021-0.5

WAC Settings: samples in this Job do not 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 FAILS the Inert (Inert waste landfill) criteria.

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	6.7	3	5
2	LOI (loss on ignition)	%	13	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	200	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	8.8	100	-
7	pH	pH	9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.013	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.016	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.088	0.5	10
13	copper	mg/kg	0.034	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.047	0.5	10
16	nickel	mg/kg	0.043	0.4	10
17	lead	mg/kg	0.008	0.5	10
18	antimony	mg/kg	0.0069	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.5	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	150	500	800
26	TDS (total dissolved solids)	mg/kg	1000	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail
	Non Hazardous WAC criteria fail

Classification of sample: BH01-2-06/09/2021-1

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

Sample details

Sample name:	LoW Code:
BH01-2-06/09/2021-1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
11%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				7.3	mg/kg	1.197	7.778	mg/kg	0.000778 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				16	mg/kg	1.32	18.801	mg/kg	0.00188 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				0.47	mg/kg	3.22	1.347	mg/kg	0.000135 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				2.7	mg/kg	1.142	2.745	mg/kg	0.000275 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19	mg/kg	1.462	24.715	mg/kg	0.00247 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				31	mg/kg	1.126	31.063	mg/kg	0.00311 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	21	mg/kg	1.56	29.153	mg/kg	0.00187 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.14	mg/kg	1.353	0.169	mg/kg	0.0000169 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				6.2	mg/kg	1.5	8.278	mg/kg	0.000828 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				54	mg/kg	2.976	143.039	mg/kg	0.0143 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.49	mg/kg	2.554	1.114	mg/kg	0.000111 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				94	mg/kg	2.774	232.085	mg/kg	0.0232 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				120	mg/kg		106.8	mg/kg	0.0107 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				9.2 pH		9.2 pH	9.2 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				5.5 mg/kg		4.895 mg/kg	0.000489 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				60 mg/kg	1.233	65.869 mg/kg	0.00659 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0671 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0107%)

WAC results for sample: BH01-2-06/09/2021-1

WAC Settings: samples in this Job do not 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 FAILS the Inert (Inert waste landfill) criteria.

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	3.6	3	5
2	LOI (loss on ignition) %	4.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	120	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH	9.2	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.009	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	<0.0002	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.093	0.5	10
13	copper mg/kg	0.01	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.032	0.5	10
16	nickel mg/kg	0.043	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	4.2	10	150
23	sulphate mg/kg	<10	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	120	500	800
26	TDS (total dissolved solids) mg/kg	710	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: BH02-1-06/09/2021-0.5

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

Sample details

Sample name:	LoW Code:
BH02-1-06/09/2021-0.5	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				4.3	mg/kg	1.197	4.375	mg/kg	0.000438 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				19	mg/kg	1.32	21.323	mg/kg	0.00213 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				1.5	mg/kg	3.22	4.105	mg/kg	0.000411 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				1.5	mg/kg	1.142	1.456	mg/kg	0.000146 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				20	mg/kg	1.462	24.846	mg/kg	0.00248 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				62	mg/kg	1.126	59.334	mg/kg	0.00593 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	160	mg/kg	1.56	212.135	mg/kg	0.0136 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.64	mg/kg	1.353	0.736	mg/kg	0.0000736 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				3.8	mg/kg	1.5	4.846	mg/kg	0.000485 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				48	mg/kg	2.976	121.432	mg/kg	0.0121 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.6	mg/kg	2.554	1.302	mg/kg	0.00013 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				110	mg/kg	2.774	259.383	mg/kg	0.0259 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				430	mg/kg		365.5	mg/kg	0.0366 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.7 pH		8.7 pH	8.7 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				0.6 mg/kg		0.51 mg/kg	0.000051 %		✓	
		201-581-5	85-01-8								
27	anthracene				0.12 mg/kg		0.102 mg/kg	0.0000102 %		✓	
		204-371-1	120-12-7								
28	fluoranthene				0.85 mg/kg		0.723 mg/kg	0.0000723 %		✓	
		205-912-4	206-44-0								
29	pyrene				0.84 mg/kg		0.714 mg/kg	0.0000714 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				0.48 mg/kg		0.408 mg/kg	0.0000408 %		✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				0.57 mg/kg		0.484 mg/kg	0.0000484 %		✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				0.66 mg/kg		0.561 mg/kg	0.0000561 %		✓	
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				0.24 mg/kg		0.204 mg/kg	0.0000204 %		✓	
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				0.47 mg/kg		0.399 mg/kg	0.0000399 %		✓	
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				0.37 mg/kg		0.315 mg/kg	0.0000314 %		✓	
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				0.13 mg/kg		0.111 mg/kg	0.0000111 %		✓	
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				0.39 mg/kg		0.331 mg/kg	0.0000331 %		✓	
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				86 mg/kg	1.233	90.168 mg/kg	0.00902 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.11 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0366%)

WAC results for sample: BH02-1-06/09/2021-0.5

WAC Settings: samples in this Job do not 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 FAILS the Inert (Inert waste landfill) criteria.

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	3.8	3	5
2	LOI (loss on ignition)	%	11	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	430	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	5.7	100	-
7	pH	pH	8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.009	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.021	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.088	0.5	10
13	copper	mg/kg	0.048	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.064	0.5	10
16	nickel	mg/kg	0.052	0.4	10
17	lead	mg/kg	0.0077	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	3.9	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	220	500	800
26	TDS (total dissolved solids)	mg/kg	780	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: BH02-2-06/09/2021-1

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

Sample details

Sample name:	LoW Code:
BH02-2-06/09/2021-1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.2%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.2% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.7	mg/kg	1.197	2.935	mg/kg	0.000293 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				12	mg/kg	1.32	14.386	mg/kg	0.00144 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				1.8	mg/kg	1.142	1.867	mg/kg	0.000187 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14	mg/kg	1.462	18.579	mg/kg	0.00186 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				21	mg/kg	1.126	21.468	mg/kg	0.00215 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	17	mg/kg	1.56	24.077	mg/kg	0.00154 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				2.6	mg/kg	1.5	3.542	mg/kg	0.000354 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				34	mg/kg	2.976	91.883	mg/kg	0.00919 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.27	mg/kg	2.554	0.626	mg/kg	0.0000626 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				50	mg/kg	2.774	125.946	mg/kg	0.0126 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				98	mg/kg		88.984	mg/kg	0.0089 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				9.1 pH		9.1 pH	9.1 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				5 mg/kg		4.54 mg/kg	0.000454 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				41 mg/kg	1.233	45.921 mg/kg	0.00459 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0442 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0089%)

WAC results for sample: BH02-2-06/09/2021-1

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	0.89	3	5
2	LOI (loss on ignition) %	4.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	98	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH pH	9.1	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.021	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0034	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.087	0.5	10
13	copper mg/kg	0.014	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.064	0.5	10
16	nickel mg/kg	0.041	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	4.1	10	150
23	sulphate mg/kg	28	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	130	500	800
26	TDS (total dissolved solids) mg/kg	650	4,000	60,000

Key

User supplied data

Classification of sample: BH03-1-06/09/2021-0.5

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

Sample details

Sample name:	LoW Code:
BH03-1-06/09/2021-0.5	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.2	mg/kg	1.197	2.291	mg/kg	0.000229 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				11	mg/kg	1.32	12.636	mg/kg	0.00126 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				1.2	mg/kg	3.22	3.362	mg/kg	0.000336 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				1.3	mg/kg	1.142	1.292	mg/kg	0.000129 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				14	mg/kg	1.462	17.802	mg/kg	0.00178 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				29	mg/kg	1.126	28.406	mg/kg	0.00284 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	59	mg/kg	1.56	80.065	mg/kg	0.00513 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.22	mg/kg	1.353	0.259	mg/kg	0.0000259 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				2.6	mg/kg	1.5	3.393	mg/kg	0.000339 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				32	mg/kg	2.976	82.859	mg/kg	0.00829 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.44	mg/kg	2.554	0.978	mg/kg	0.0000978 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				64	mg/kg	2.774	154.464	mg/kg	0.0154 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				86	mg/kg		74.82	mg/kg	0.00748 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.8 pH		8.8 pH	8.8 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				3.5 mg/kg		3.045 mg/kg	0.000305 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				47 mg/kg	1.233	50.438 mg/kg	0.00504 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0491 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00748%)

WAC results for sample: BH03-1-06/09/2021-0.5

WAC Settings: samples in this Job do not 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 FAILS the Inert (Inert waste landfill) criteria.

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	4	3	5
2	LOI (loss on ignition) %	7.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	86	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH pH	8.8	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.008	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0045	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.088	0.5	10
13	copper mg/kg	0.013	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.15	0.5	10
16	nickel mg/kg	0.041	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	0.0052	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	4.5	10	150
23	sulphate mg/kg	<10	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	140	500	800
26	TDS (total dissolved solids) mg/kg	580	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: BH03-2-06/09/2021-1

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

Sample details

Sample name:	LoW Code:
BH03-2-06/09/2021-1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.5	mg/kg	1.197	2.768	mg/kg	0.000277 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				22	mg/kg	1.32	26.869	mg/kg	0.00269 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				2.3	mg/kg	1.142	2.43	mg/kg	0.000243 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17	mg/kg	1.462	22.983	mg/kg	0.0023 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				29	mg/kg	1.126	30.202	mg/kg	0.00302 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	20	mg/kg	1.56	28.857	mg/kg	0.00185 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				4.1	mg/kg	1.5	5.689	mg/kg	0.000569 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				51	mg/kg	2.976	140.405	mg/kg	0.014 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.31	mg/kg	2.554	0.732	mg/kg	0.0000732 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				74	mg/kg	2.774	189.89	mg/kg	0.019 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				110	mg/kg		101.75	mg/kg	0.0102 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				1.1 mg/kg	1.884	1.917 mg/kg	0.000192 %	✓		
	006-007-00-5										
21	pH				9.3 pH		9.3 pH	9.3 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				3 mg/kg		2.775 mg/kg	0.000277 %	✓		
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				51 mg/kg	1.233	58.19 mg/kg	0.00582 %	✓		
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.061 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0102%)

WAC results for sample: BH03-2-06/09/2021-1

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	0.8	3	5
2	LOI (loss on ignition) %	2.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	110	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH pH	9.3	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.031	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0021	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.089	0.5	10
13	copper mg/kg	0.0055	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.053	0.5	10
16	nickel mg/kg	0.041	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	4	10	150
23	sulphate mg/kg	20	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	81	500	800
26	TDS (total dissolved solids) mg/kg	580	4,000	60,000

Key

User supplied data

Classification of sample: BH04-1-06/09/2021-0.5

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

Sample details

Sample name:	LoW Code:
BH04-1-06/09/2021-0.5	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				5.7 mg/kg	1.197	5.936 mg/kg	0.000594 %	✓	
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				26 mg/kg	1.32	29.866 mg/kg	0.00299 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				1.3 mg/kg	3.22	3.642 mg/kg	0.000364 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				1.7 mg/kg	1.142	1.69 mg/kg	0.000169 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22 mg/kg	1.462	27.974 mg/kg	0.0028 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				61 mg/kg	1.126	59.751 mg/kg	0.00598 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	120 mg/kg	1.56	162.845 mg/kg	0.0104 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.58 mg/kg	1.353	0.683 mg/kg	0.0000683 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				4 mg/kg	1.5	5.221 mg/kg	0.000522 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				48 mg/kg	2.976	124.289 mg/kg	0.0124 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.8 mg/kg	2.554	1.777 mg/kg	0.000178 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				160 mg/kg	2.774	386.161 mg/kg	0.0386 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				160 mg/kg		139.2 mg/kg	0.0139 %	✓	
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.9 pH		8.9 pH	8.9 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				0.59 mg/kg		0.513 mg/kg	0.0000513 %		✓	
		201-581-5	85-01-8								
27	anthracene				0.12 mg/kg		0.104 mg/kg	0.0000104 %		✓	
		204-371-1	120-12-7								
28	fluoranthene				0.85 mg/kg		0.74 mg/kg	0.000074 %		✓	
		205-912-4	206-44-0								
29	pyrene				0.8 mg/kg		0.696 mg/kg	0.0000696 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				0.5 mg/kg		0.435 mg/kg	0.0000435 %		✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				0.6 mg/kg		0.522 mg/kg	0.0000522 %		✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				0.63 mg/kg		0.548 mg/kg	0.0000548 %		✓	
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				0.23 mg/kg		0.2 mg/kg	0.00002 %		✓	
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				0.46 mg/kg		0.4 mg/kg	0.00004 %		✓	
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				0.32 mg/kg		0.278 mg/kg	0.0000278 %		✓	
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				0.33 mg/kg		0.287 mg/kg	0.0000287 %		✓	
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				97 mg/kg	1.233	104.095 mg/kg	0.0104 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.1 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0139%)

WAC results for sample: BH04-1-06/09/2021-0.5

WAC Settings: samples in this Job do not 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 FAILS the Inert (Inert waste landfill) criteria.

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.9	3	5
2	LOI (loss on ignition)	%	9.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	160	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	5.4	100	-
7	pH	pH	8.9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.012	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.011	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.085	0.5	10
13	copper	mg/kg	0.039	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.056	0.5	10
16	nickel	mg/kg	0.05	0.4	10
17	lead	mg/kg	0.0074	0.5	10
18	antimony	mg/kg	0.0083	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	6.1	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	240	500	800
26	TDS (total dissolved solids)	mg/kg	970	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: BH04-2-06/09/2021-1

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

Sample details

Sample name:	LoW Code:
BH04-2-06/09/2021-1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
10%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 10% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.8	mg/kg	1.197	3.017	mg/kg	0.000302 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				19	mg/kg	1.32	22.578	mg/kg	0.00226 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				2	mg/kg	1.142	2.056	mg/kg	0.000206 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				21	mg/kg	1.462	27.623	mg/kg	0.00276 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				35	mg/kg	1.126	35.465	mg/kg	0.00355 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	95	mg/kg	1.56	133.364	mg/kg	0.00855 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				<0.1	mg/kg	1.353	<0.135	mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				4.3	mg/kg	1.5	5.806	mg/kg	0.000581 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				46	mg/kg	2.976	123.217	mg/kg	0.0123 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				<0.2	mg/kg	2.554	<0.511	mg/kg	<0.0000511 %		<LOD
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				70	mg/kg	2.774	174.771	mg/kg	0.0175 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				53	mg/kg		47.7	mg/kg	0.00477 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				9.1 pH		9.1 pH	9.1 pH			
			P1186								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				4.4 mg/kg		3.96 mg/kg	0.000396 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				71 mg/kg	1.233	78.82 mg/kg	0.00788 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0616 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00477%)

WAC results for sample: BH04-2-06/09/2021-1

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	1.3	3	5
2	LOI (loss on ignition) %	3.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	53	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH pH	9.1	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.019	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	<0.0002	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.081	0.5	10
13	copper mg/kg	0.0053	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.068	0.5	10
16	nickel mg/kg	0.039	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	3.2	10	150
23	sulphate mg/kg	30	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	76	500	800
26	TDS (total dissolved solids) mg/kg	570	4,000	60,000

Key

User supplied data

Classification of sample: BH05-1-06/09/2021-0.5

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

Sample details

Sample name:	LoW Code:
BH05-1-06/09/2021-0.5	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
4.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 4.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				23 mg/kg	1.32	28.94 mg/kg	0.00289 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				3.2 mg/kg	1.142	3.484 mg/kg	0.000348 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				26 mg/kg	1.462	36.214 mg/kg	0.00362 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				25 mg/kg	1.126	26.824 mg/kg	0.00268 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	38 mg/kg	1.56	56.487 mg/kg	0.00362 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.11 mg/kg	1.353	0.142 mg/kg	0.0000142 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				4.3 mg/kg	1.5	6.148 mg/kg	0.000615 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				55 mg/kg	2.976	156.001 mg/kg	0.0156 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.7 mg/kg	2.554	1.704 mg/kg	0.00017 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				74 mg/kg	2.774	195.638 mg/kg	0.0196 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				84 mg/kg		80.052 mg/kg	0.00801 %	✓	
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				9.2 pH		9.2 pH	9.2 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				1.1 mg/kg		1.048 mg/kg	0.000105 %		✓	
		201-581-5	85-01-8								
27	anthracene				0.22 mg/kg		0.21 mg/kg	0.000021 %		✓	
		204-371-1	120-12-7								
28	fluoranthene				0.94 mg/kg		0.896 mg/kg	0.0000896 %		✓	
		205-912-4	206-44-0								
29	pyrene				0.84 mg/kg		0.801 mg/kg	0.0000801 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				0.53 mg/kg		0.505 mg/kg	0.0000505 %		✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				0.6 mg/kg		0.572 mg/kg	0.0000572 %		✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				0.6 mg/kg		0.572 mg/kg	0.0000572 %		✓	
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				0.26 mg/kg		0.248 mg/kg	0.0000248 %		✓	
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				0.38 mg/kg		0.362 mg/kg	0.0000362 %		✓	
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				0.3 mg/kg		0.286 mg/kg	0.0000286 %		✓	
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				0.13 mg/kg		0.124 mg/kg	0.0000124 %		✓	
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				0.3 mg/kg		0.286 mg/kg	0.0000286 %		✓	
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				67 mg/kg	1.233	78.76 mg/kg	0.00788 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0663 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00801%)

WAC results for sample: BH05-1-06/09/2021-0.5

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.4	3	5
2	LOI (loss on ignition)	%	3.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	84	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	6.2	100	-
7	pH	pH	9.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.03	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.02	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.1	0.5	10
13	copper	mg/kg	0.013	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.076	0.5	10
16	nickel	mg/kg	0.04	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.9	10	150
23	sulphate	mg/kg	68	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	110	500	800
26	TDS (total dissolved solids)	mg/kg	550	4,000	60,000

Key

User supplied data

Classification of sample: BH05-2-06/09/2021-1

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

Sample details

Sample name:	LoW Code:
BH05-2-06/09/2021-1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
17%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.1	mg/kg	1.197	2.087	mg/kg	0.000209 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				15	mg/kg	1.32	16.438	mg/kg	0.00164 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				0.7	mg/kg	3.22	1.871	mg/kg	0.000187 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				2.2	mg/kg	1.142	2.086	mg/kg	0.000209 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				20	mg/kg	1.462	24.262	mg/kg	0.00243 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				43	mg/kg	1.126	40.183	mg/kg	0.00402 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	51	mg/kg	1.56	66.027	mg/kg	0.00423 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.21	mg/kg	1.353	0.236	mg/kg	0.0000236 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				3.7	mg/kg	1.5	4.607	mg/kg	0.000461 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				50	mg/kg	2.976	123.515	mg/kg	0.0124 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				1.2	mg/kg	2.554	2.544	mg/kg	0.000254 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				93	mg/kg	2.774	214.136	mg/kg	0.0214 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				86	mg/kg		71.38	mg/kg	0.00714 %	✓	
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.6 pH		8.6 pH	8.6 pH			
			P1186								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				1.9 mg/kg		1.577 mg/kg	0.000158 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				67 mg/kg	1.233	68.595 mg/kg	0.00686 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.062 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00714%)

WAC results for sample: BH05-2-06/09/2021-1

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	2.8	3	5
2	LOI (loss on ignition) %	6.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	86	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH pH	8.6	-	>6
8	ANC (acid neutralisation capacity) mol/kg	<0.002	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0035	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.084	0.5	10
13	copper mg/kg	0.016	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.037	0.5	10
16	nickel mg/kg	0.041	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	3.4	10	150
23	sulphate mg/kg	150	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	120	500	800
26	TDS (total dissolved solids) mg/kg	970	4,000	60,000

Key

User supplied data

Classification of sample: TP07-03/09/2021-0.5

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

Sample details

Sample name:	LoW Code:
TP07-03/09/2021-0.5	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.5 m	
Moisture content:	
17%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				14 mg/kg	1.32	15.342 mg/kg	0.00153 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				2.3 mg/kg	1.142	2.181 mg/kg	0.000218 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19 mg/kg	1.462	23.049 mg/kg	0.0023 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				59 mg/kg	1.126	55.135 mg/kg	0.00551 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	33 mg/kg	1.56	42.723 mg/kg	0.00274 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.12 mg/kg	1.353	0.135 mg/kg	0.0000135 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				3.6 mg/kg	1.5	4.483 mg/kg	0.000448 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				63 mg/kg	2.976	155.629 mg/kg	0.0156 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.48 mg/kg	2.554	1.017 mg/kg	0.000102 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				100 mg/kg	2.774	230.254 mg/kg	0.023 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				9.2 pH		9.2 pH	9.2 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				62 mg/kg	1.233	63.476 mg/kg	0.00635 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0597 %		

Key

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

WAC results for sample: TP07-03/09/2021-0.5

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.3	3	5
2	LOI (loss on ignition)	%	4.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	9.2	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.011	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.003	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.045	0.5	10
13	copper	mg/kg	0.02	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.056	0.5	10
16	nickel	mg/kg	0.027	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	130	500	800
26	TDS (total dissolved solids)	mg/kg	1600	4,000	60,000

Key

User supplied data

Classification of sample: TP07-03/09/2021-1

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

Sample details

Sample name:	LoW Code:
TP07-03/09/2021-1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				11	mg/kg	1.32	12.636	mg/kg	0.00126 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				0.4	mg/kg	3.22	1.121	mg/kg	0.000112 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				1.3	mg/kg	1.142	1.292	mg/kg	0.000129 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				13	mg/kg	1.462	16.53	mg/kg	0.00165 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				44	mg/kg	1.126	43.099	mg/kg	0.00431 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	29	mg/kg	1.56	39.354	mg/kg	0.00252 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.13	mg/kg	1.353	0.153	mg/kg	0.0000153 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				2.5	mg/kg	1.5	3.263	mg/kg	0.000326 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				42	mg/kg	2.976	108.753	mg/kg	0.0109 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.3	mg/kg	2.554	0.667	mg/kg	0.0000667 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				74	mg/kg	2.774	178.6	mg/kg	0.0179 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH		PH		9 pH		9 pH	9pH			
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				1.4 mg/kg		1.218 mg/kg	0.000122 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				40 mg/kg	1.233	42.926 mg/kg	0.00429 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0452 %		

Key

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

WAC results for sample: TP07-03/09/2021-1

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.8	3	5
2	LOI (loss on ignition)	% 4.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <2	100	-
7	pH	pH 9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg 0.007	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg 0.0031	0.5	2
10	barium	mg/kg <0.0005	20	100
11	cadmium	mg/kg <0.0001	0.04	1
12	chromium	mg/kg 0.046	0.5	10
13	copper	mg/kg 0.03	2	50
14	mercury	mg/kg <5.0e-05	0.01	0.2
15	molybdenum	mg/kg 0.065	0.5	10
16	nickel	mg/kg 0.026	0.4	10
17	lead	mg/kg <0.0005	0.5	10
18	antimony	mg/kg 0.0056	0.06	0.7
19	selenium	mg/kg <0.0005	0.1	0.5
20	zinc	mg/kg <0.0025	4	50
21	chloride	mg/kg <10	800	15,000
22	fluoride	mg/kg 4.6	10	150
23	sulphate	mg/kg <10	1,000	20,000
24	phenol index	mg/kg <0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg 130	500	800
26	TDS (total dissolved solids)	mg/kg 840	4,000	60,000

Key

User supplied data

Classification of sample: TP08-03/09/2021-0.5

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

Sample details

Sample name:	LoW Code:
TP08-03/09/2021-0.5	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.5 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				15 mg/kg	1.32	17.23 mg/kg	0.00172 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				2.1 mg/kg	1.142	2.087 mg/kg	0.000209 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				20 mg/kg	1.462	25.431 mg/kg	0.00254 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				47 mg/kg	1.126	46.038 mg/kg	0.0046 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	27 mg/kg	1.56	36.64 mg/kg	0.00235 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.13 mg/kg	1.353	0.153 mg/kg	0.0000153 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				3.9 mg/kg	1.5	5.09 mg/kg	0.000509 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				65 mg/kg	2.976	168.308 mg/kg	0.0168 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.86 mg/kg	2.554	1.911 mg/kg	0.000191 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				99 mg/kg	2.774	238.937 mg/kg	0.0239 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				9 pH		9 pH	9pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				56 mg/kg	1.233	60.096 mg/kg	0.00601 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0607 %		

Key

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

WAC results for sample: TP08-03/09/2021-0.5

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.4	3	5
2	LOI (loss on ignition)	% 3.4	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <2	100	-
7	pH	pH 9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg 0.01	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.0002	0.5	2
10	barium	mg/kg <0.0005	20	100
11	cadmium	mg/kg <0.0001	0.04	1
12	chromium	mg/kg 0.045	0.5	10
13	copper	mg/kg 0.016	2	50
14	mercury	mg/kg <5.0e-05	0.01	0.2
15	molybdenum	mg/kg 0.039	0.5	10
16	nickel	mg/kg 0.023	0.4	10
17	lead	mg/kg <0.0005	0.5	10
18	antimony	mg/kg <0.0005	0.06	0.7
19	selenium	mg/kg <0.0005	0.1	0.5
20	zinc	mg/kg <0.0025	4	50
21	chloride	mg/kg <10	800	15,000
22	fluoride	mg/kg 4	10	150
23	sulphate	mg/kg 28	1,000	20,000
24	phenol index	mg/kg <0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg 130	500	800
26	TDS (total dissolved solids)	mg/kg 780	4,000	60,000

Key

User supplied data

Classification of sample: TP08-03/09/2021-1

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

Sample details

Sample name:	LoW Code:
TP08-03/09/2021-1	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				11 mg/kg	1.32	12.345 mg/kg	0.00123 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				3.3 mg/kg	3.22	9.032 mg/kg	0.000903 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				1.8 mg/kg	1.142	1.748 mg/kg	0.000175 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	19.877 mg/kg	0.00199 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				60 mg/kg	1.126	57.42 mg/kg	0.00574 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	20 mg/kg	1.56	26.517 mg/kg	0.0017 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.16 mg/kg	1.353	0.184 mg/kg	0.0000184 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				3.1 mg/kg	1.5	3.953 mg/kg	0.000395 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				53 mg/kg	2.976	134.081 mg/kg	0.0134 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.59 mg/kg	2.554	1.281 mg/kg	0.000128 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				83 mg/kg	2.774	195.716 mg/kg	0.0196 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.9 pH		8.9 pH	8.9 pH			
			P1186								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				44 mg/kg	1.233	46.133 mg/kg	0.00461 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0516 %		

Key

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

WAC results for sample: TP08-03/09/2021-1

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	1	3	5
2	LOI (loss on ignition) %	3.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH	8.9	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.003	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0025	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.056	0.5	10
13	copper mg/kg	0.018	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.027	0.5	10
16	nickel mg/kg	0.028	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	3.3	10	150
23	sulphate mg/kg	17	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	110	500	800
26	TDS (total dissolved solids) mg/kg	580	4,000	60,000

Key

User supplied data

Classification of sample: TP01-02/09/2021-0.50

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

Sample details

Sample name:	LoW Code:
TP01-02/09/2021-0.50	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
11%	
(wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				12 mg/kg	1.32	14.101 mg/kg	0.00141 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				0.59 mg/kg	3.22	1.691 mg/kg	0.000169 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				1.9 mg/kg	1.142	1.932 mg/kg	0.000193 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	22.113 mg/kg	0.00221 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				40 mg/kg	1.126	40.082 mg/kg	0.00401 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	37 mg/kg	1.56	51.365 mg/kg	0.00329 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.22 mg/kg	1.353	0.265 mg/kg	0.0000265 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				2.7 mg/kg	1.5	3.605 mg/kg	0.00036 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				46 mg/kg	2.976	121.848 mg/kg	0.0122 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.5 mg/kg	2.554	1.136 mg/kg	0.000114 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				89 mg/kg	2.774	219.74 mg/kg	0.022 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.7 pH		8.7 pH	8.7 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				0.12 mg/kg		0.107 mg/kg	0.0000107 %		✓	
		205-912-4	206-44-0								
29	pyrene				0.2 mg/kg		0.178 mg/kg	0.0000178 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				58 mg/kg	1.233	63.673 mg/kg	0.00637 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0541 %		

Key

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

WAC results for sample: TP01-02/09/2021-0.50

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 1.1	3	5
2	LOI (loss on ignition)	% 90	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <2	100	-
7	pH	pH 8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg 0.01	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg 0.0057	0.5	2
10	barium	mg/kg <0.0005	20	100
11	cadmium	mg/kg <0.0001	0.04	1
12	chromium	mg/kg 0.012	0.5	10
13	copper	mg/kg 0.021	2	50
14	mercury	mg/kg <5.0e-05	0.01	0.2
15	molybdenum	mg/kg 0.058	0.5	10
16	nickel	mg/kg 0.013	0.4	10
17	lead	mg/kg <0.0005	0.5	10
18	antimony	mg/kg <0.0005	0.06	0.7
19	selenium	mg/kg <0.0005	0.1	0.5
20	zinc	mg/kg <0.0025	4	50
21	chloride	mg/kg <10	800	15,000
22	fluoride	mg/kg 4	10	150
23	sulphate	mg/kg <10	1,000	20,000
24	phenol index	mg/kg <0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg 150	500	800
26	TDS (total dissolved solids)	mg/kg 780	4,000	60,000

Key

User supplied data

Classification of sample: TP01-02/09/2021-1.00

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

Sample details

Sample name:	LoW Code:
TP01-02/09/2021-1.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.1%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.1% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				4.1	mg/kg	1.197	4.609	mg/kg	0.000461 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				15	mg/kg	1.32	18.597	mg/kg	0.00186 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				2	mg/kg	1.142	2.145	mg/kg	0.000215 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12	mg/kg	1.462	16.469	mg/kg	0.00165 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				56	mg/kg	1.126	59.204	mg/kg	0.00592 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	23	mg/kg	1.56	33.687	mg/kg	0.00216 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.11	mg/kg	1.353	0.14	mg/kg	0.000014 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				3.7	mg/kg	1.5	5.212	mg/kg	0.000521 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				40	mg/kg	2.976	111.789	mg/kg	0.0112 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.33	mg/kg	2.554	0.791	mg/kg	0.0000791 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				66	mg/kg	2.774	171.925	mg/kg	0.0172 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.8 pH		8.8 pH	8.8 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				42 mg/kg	1.233	48.647 mg/kg	0.00486 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0477 %		

Key

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

WAC results for sample: TP01-02/09/2021-1.00

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.3	3	5
2	LOI (loss on ignition)	%	2.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.8	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.034	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	<0.0005	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.031	0.5	10
16	nickel	mg/kg	0.0062	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	69	500	800
26	TDS (total dissolved solids)	mg/kg	470	4,000	60,000

Key

User supplied data

Classification of sample: TP02-02/09/2021-0.50

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

Sample details

Sample name:	LoW Code:
TP02-02/09/2021-0.50	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
9.9%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.9% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				3.1	mg/kg	1.197	3.344	mg/kg	0.000334 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				18	mg/kg	1.32	21.413	mg/kg	0.00214 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				0.54	mg/kg	3.22	1.567	mg/kg	0.000157 %	✓	
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				2.3	mg/kg	1.142	2.367	mg/kg	0.000237 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				19	mg/kg	1.462	25.02	mg/kg	0.0025 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				65	mg/kg	1.126	65.938	mg/kg	0.00659 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	69	mg/kg	1.56	96.972	mg/kg	0.00622 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.39	mg/kg	1.353	0.476	mg/kg	0.0000476 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				4.3	mg/kg	1.5	5.812	mg/kg	0.000581 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				61	mg/kg	2.976	163.578	mg/kg	0.0164 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.7	mg/kg	2.554	1.611	mg/kg	0.000161 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				97	mg/kg	2.774	242.452	mg/kg	0.0242 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.8 pH		8.8 pH	8.8 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				1.5 mg/kg		1.351 mg/kg	0.000135 %		✓	
		201-581-5	85-01-8								
27	anthracene				0.27 mg/kg		0.243 mg/kg	0.0000243 %		✓	
		204-371-1	120-12-7								
28	fluoranthene				1.8 mg/kg		1.622 mg/kg	0.000162 %		✓	
		205-912-4	206-44-0								
29	pyrene				1.5 mg/kg		1.351 mg/kg	0.000135 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				0.66 mg/kg		0.595 mg/kg	0.0000595 %		✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				0.64 mg/kg		0.577 mg/kg	0.0000577 %		✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				0.83 mg/kg		0.748 mg/kg	0.0000748 %		✓	
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				0.3 mg/kg		0.27 mg/kg	0.000027 %		✓	
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				0.55 mg/kg		0.496 mg/kg	0.0000496 %		✓	
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				0.42 mg/kg		0.378 mg/kg	0.0000378 %		✓	
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				0.17 mg/kg		0.153 mg/kg	0.0000153 %		✓	
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				0.45 mg/kg		0.405 mg/kg	0.0000405 %		✓	
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				1.7 mg/kg		1.532 mg/kg	0.000153 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				80 mg/kg	1.233	88.91 mg/kg	0.00889 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0707 %		

Key

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

WAC results for sample: TP02-02/09/2021-0.50

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	1.8	3	5
2	LOI (loss on ignition) %	5.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	9.1	100	-
7	pH pH	8.8	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.016	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0032	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.01	0.5	10
13	copper mg/kg	0.012	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.048	0.5	10
16	nickel mg/kg	0.0083	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	4.1	10	150
23	sulphate mg/kg	<10	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	120	500	800
26	TDS (total dissolved solids) mg/kg	710	4,000	60,000

Key

User supplied data

Classification of sample: TP02-02/09/2021-1.00

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

Sample details

Sample name:	LoW Code:
TP02-02/09/2021-1.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				2.6	mg/kg	1.197	2.885	mg/kg	0.000289 %	✓	
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				19	mg/kg	1.32	23.255	mg/kg	0.00233 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				2.4	mg/kg	1.142	2.541	mg/kg	0.000254 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16	mg/kg	1.462	21.678	mg/kg	0.00217 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				38	mg/kg	1.126	39.661	mg/kg	0.00397 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	23	mg/kg	1.56	33.257	mg/kg	0.00213 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.11	mg/kg	1.353	0.138	mg/kg	0.0000138 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				4.5	mg/kg	1.5	6.258	mg/kg	0.000626 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				57	mg/kg	2.976	157.263	mg/kg	0.0157 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.39	mg/kg	2.554	0.923	mg/kg	0.0000923 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				80	mg/kg	2.774	205.731	mg/kg	0.0206 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.8 pH		8.8 pH	8.8 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				53 mg/kg	1.233	60.603 mg/kg	0.00606 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0559 %		

Key

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

WAC results for sample: TP02-02/09/2021-1.00

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	0.33	3	5
2	LOI (loss on ignition) %	2.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH pH	8.8	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.037	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	<0.0002	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.0074	0.5	10
13	copper mg/kg	<0.0005	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.069	0.5	10
16	nickel mg/kg	<0.0005	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	3.4	10	150
23	sulphate mg/kg	11	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	73	500	800
26	TDS (total dissolved solids) mg/kg	590	4,000	60,000

Key

User supplied data

Classification of sample: TP03-02/09/2021-0.50

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

Sample details

Sample name:	LoW Code:
TP03-02/09/2021-0.50	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number									
1	antimony { antimony trioxide }				<2	mg/kg	1.197	<2.394	mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4									
2	arsenic { arsenic trioxide }				11	mg/kg	1.32	13.405	mg/kg	0.00134 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
3	boron { diboron trioxide; boric oxide }				<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2									
4	cadmium { cadmium oxide }				1.2	mg/kg	1.142	1.265	mg/kg	0.000127 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				10	mg/kg	1.462	13.49	mg/kg	0.00135 %	✓	
		215-160-9	1308-38-9									
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5	mg/kg	2.27	<1.135	mg/kg	<0.000113 %		<LOD
	024-017-00-8											
7	copper { dicopper oxide; copper (I) oxide }				24	mg/kg	1.126	24.941	mg/kg	0.00249 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
8	lead { lead chromate }			1	29	mg/kg	1.56	41.752	mg/kg	0.00268 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
9	mercury { mercury dichloride }				0.17	mg/kg	1.353	0.212	mg/kg	0.0000212 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
10	molybdenum { molybdenum(VI) oxide }				2.4	mg/kg	1.5	3.323	mg/kg	0.000332 %	✓	
	042-001-00-9	215-204-7	1313-27-5									
11	nickel { nickel chromate }				30	mg/kg	2.976	82.413	mg/kg	0.00824 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
12	selenium { nickel selenate }				0.23	mg/kg	2.554	0.542	mg/kg	0.0000542 %	✓	
	028-031-00-5	239-125-2	15060-62-5									
13	zinc { zinc chromate }				48	mg/kg	2.774	122.906	mg/kg	0.0123 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
14	TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
			TPH									
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4									
16	benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.9 pH		8.9 pH	8.9 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				2.9 mg/kg		2.677 mg/kg	0.000268 %		✓	
		201-581-5	85-01-8								
27	anthracene				0.44 mg/kg		0.406 mg/kg	0.0000406 %		✓	
		204-371-1	120-12-7								
28	fluoranthene				2.3 mg/kg		2.123 mg/kg	0.000212 %		✓	
		205-912-4	206-44-0								
29	pyrene				2 mg/kg		1.846 mg/kg	0.000185 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				0.87 mg/kg		0.803 mg/kg	0.0000803 %		✓	
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				1 mg/kg		0.923 mg/kg	0.0000923 %		✓	
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				0.97 mg/kg		0.895 mg/kg	0.0000895 %		✓	
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				0.34 mg/kg		0.314 mg/kg	0.0000314 %		✓	
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				0.69 mg/kg		0.637 mg/kg	0.0000637 %		✓	
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				0.49 mg/kg		0.452 mg/kg	0.0000452 %		✓	
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				0.14 mg/kg		0.129 mg/kg	0.0000129 %		✓	
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				0.5 mg/kg		0.461 mg/kg	0.0000461 %		✓	
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				1.5 mg/kg		1.384 mg/kg	0.000138 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				36 mg/kg	1.233	40.987 mg/kg	0.0041 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.036 %		

Key

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

WAC results for sample: TP03-02/09/2021-0.50

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	0.91	3	5
2	LOI (loss on ignition) %	3.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	13	100	-
7	pH pH	8.9	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.048	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0032	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	0.0085	0.5	10
13	copper mg/kg	0.0079	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.066	0.5	10
16	nickel mg/kg	0.0084	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	11	800	15,000
22	fluoride mg/kg	2.8	10	150
23	sulphate mg/kg	<10	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	77	500	800
26	TDS (total dissolved solids) mg/kg	480	4,000	60,000

Key

User supplied data

Classification of sample: TP03-02/09/2021-1.00

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

Sample details

Sample name:	LoW Code:
TP03-02/09/2021-1.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.4%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.4% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				15 mg/kg	1.32	18.339 mg/kg	0.00183 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				2 mg/kg	1.142	2.116 mg/kg	0.000212 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	16.241 mg/kg	0.00162 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				33 mg/kg	1.126	34.405 mg/kg	0.00344 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	18 mg/kg	1.56	25.999 mg/kg	0.00167 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				3.6 mg/kg	1.5	5.001 mg/kg	0.0005 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				46 mg/kg	2.976	126.777 mg/kg	0.0127 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				63 mg/kg	2.774	161.838 mg/kg	0.0162 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
17	toluene				0.0026 mg/kg		0.0024 mg/kg	0.000000241 %	✓	
	601-021-00-3	203-625-9	108-88-3							
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %		<LOD
	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]							
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				0.5 mg/kg	1.884	0.872 mg/kg	0.0000872 %	✓	
	006-007-00-5									
21	pH				8.9 pH		8.9 pH	8.9 pH		
			PH							
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-032-00-3	200-028-5	50-32-8							
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-041-00-2	200-181-8	53-70-3							
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	602-039-00-4	215-648-1	1336-36-3							
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	016-094-00-1	231-722-6	7704-34-9							
40	barium { barium sulphide }				55 mg/kg	1.233	62.822 mg/kg	0.00628 %	✓	
	016-002-00-X	244-214-4	21109-95-5							
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-881-7	191-07-1							
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
			P1186							
Total:								0.0463 %		

Key

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

Supplementary Hazardous Property Information

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

Force this Hazardous property to non hazardous because No free product noted at the location

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

toluene: (conc.: 2.41e-07%)

WAC results for sample: TP03-02/09/2021-1.00

WAC Settings: samples in this Job do not 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 FAILS the Inert (Inert waste landfill) criteria.

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.29	3	5
2	LOI (loss on ignition)	%	2.3	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.9	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.045	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0055	0.5	10
13	copper	mg/kg	<0.0005	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.066	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	12	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	63	500	800
26	TDS (total dissolved solids)	mg/kg	650	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP04-02/09/2021-0.50

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

Sample details

Sample name:	LoW Code:
TP04-02/09/2021-0.50	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.8%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.8% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %			<LOD
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				9.8 mg/kg	1.32	11.801 mg/kg	0.00118 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
3	boron { diboron trioxide; boric oxide }				0.42 mg/kg	3.22	1.233 mg/kg	0.000123 %		✓	
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				1.7 mg/kg	1.142	1.771 mg/kg	0.000177 %		✓	
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	22.66 mg/kg	0.00227 %		✓	
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %			<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				36 mg/kg	1.126	36.965 mg/kg	0.0037 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	19 mg/kg	1.56	27.028 mg/kg	0.00173 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				0.1 mg/kg	1.353	0.123 mg/kg	0.0000123 %		✓	
	080-010-00-X	231-299-8	7487-94-7								
10	molybdenum { molybdenum(VI) oxide }				2.5 mg/kg	1.5	3.42 mg/kg	0.000342 %		✓	
	042-001-00-9	215-204-7	1313-27-5								
11	nickel { nickel chromate }				43 mg/kg	2.976	116.717 mg/kg	0.0117 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				0.64 mg/kg	2.554	1.491 mg/kg	0.000149 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				86 mg/kg	2.774	217.582 mg/kg	0.0218 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.7 pH		8.7 pH	8.7 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				62 mg/kg	1.233	69.747 mg/kg	0.00697 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0518 %		

Key

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

WAC results for sample: TP04-02/09/2021-0.50

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	% 0.75	3	5
2	LOI (loss on ignition)	% 3.2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg <0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg <0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg <10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg <2	100	-
7	pH	pH 8.7	-	>6
8	ANC (acid neutralisation capacity)	mol/kg 0.028	-	-
Eluate Analysis 10:1				
9	arsenic	mg/kg <0.0002	0.5	2
10	barium	mg/kg <0.0005	20	100
11	cadmium	mg/kg <0.0001	0.04	1
12	chromium	mg/kg 0.006	0.5	10
13	copper	mg/kg 0.0055	2	50
14	mercury	mg/kg <5.0e-05	0.01	0.2
15	molybdenum	mg/kg 0.027	0.5	10
16	nickel	mg/kg <0.0005	0.4	10
17	lead	mg/kg <0.0005	0.5	10
18	antimony	mg/kg <0.0005	0.06	0.7
19	selenium	mg/kg <0.0005	0.1	0.5
20	zinc	mg/kg <0.0025	4	50
21	chloride	mg/kg <10	800	15,000
22	fluoride	mg/kg 5.8	10	150
23	sulphate	mg/kg <10	1,000	20,000
24	phenol index	mg/kg <0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg 110	500	800
26	TDS (total dissolved solids)	mg/kg 580	4,000	60,000

Key

User supplied data

Classification of sample: TP04-02/09/2021-1.00

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

Sample details

Sample name:	LoW Code:
TP04-02/09/2021-1.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				14 mg/kg	1.32	17.135 mg/kg	0.00171 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				2 mg/kg	1.142	2.118 mg/kg	0.000212 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15 mg/kg	1.462	20.323 mg/kg	0.00203 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				32 mg/kg	1.126	33.398 mg/kg	0.00334 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	20 mg/kg	1.56	28.919 mg/kg	0.00185 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				3.5 mg/kg	1.5	4.867 mg/kg	0.000487 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				45 mg/kg	2.976	124.155 mg/kg	0.0124 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				64 mg/kg	2.774	164.585 mg/kg	0.0165 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.9 pH		8.9 pH	8.9 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				62 mg/kg	1.233	70.894 mg/kg	0.00709 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0475 %		

Key

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

WAC results for sample: TP04-02/09/2021-1.00

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	1.4	3	5
2	LOI (loss on ignition) %	2	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH	8.9	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.053	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	<0.0002	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	<0.0005	0.5	10
13	copper mg/kg	<0.0005	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.099	0.5	10
16	nickel mg/kg	<0.0005	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	4.6	10	150
23	sulphate mg/kg	<10	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	75	500	800
26	TDS (total dissolved solids) mg/kg	520	4,000	60,000

Key

User supplied data

Classification of sample: TP05-02/09/2021-0.50

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

Sample details

Sample name:	LoW Code:
TP05-02/09/2021-0.50	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.7% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %			<LOD
	051-005-00-X	215-175-0	1309-64-4								
2	arsenic { arsenic trioxide }				15 mg/kg	1.32	18.28 mg/kg	0.00183 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %			<LOD
	005-008-00-8	215-125-8	1303-86-2								
4	cadmium { cadmium oxide }				1.5 mg/kg	1.142	1.582 mg/kg	0.000158 %		✓	
	048-002-00-0	215-146-2	1306-19-0								
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				17 mg/kg	1.462	22.933 mg/kg	0.00229 %		✓	
		215-160-9	1308-38-9								
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %			<LOD
	024-017-00-8										
7	copper { dicopper oxide; copper (I) oxide }				56 mg/kg	1.126	58.195 mg/kg	0.00582 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
8	lead { lead chromate }			1	87 mg/kg	1.56	125.255 mg/kg	0.00803 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
9	mercury { mercury dichloride }				0.31 mg/kg	1.353	0.387 mg/kg	0.0000387 %		✓	
	080-010-00-X	231-299-8	7487-94-7								
10	molybdenum { molybdenum(VI) oxide }				3.6 mg/kg	1.5	4.985 mg/kg	0.000498 %		✓	
	042-001-00-9	215-204-7	1313-27-5								
11	nickel { nickel chromate }				43 mg/kg	2.976	118.125 mg/kg	0.0118 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
12	selenium { nickel selenate }				0.8 mg/kg	2.554	1.886 mg/kg	0.000189 %		✓	
	028-031-00-5	239-125-2	15060-62-5								
13	zinc { zinc chromate }				94 mg/kg	2.774	240.691 mg/kg	0.0241 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	603-181-00-X	216-653-1	1634-04-4								
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-020-00-8	200-753-7	71-43-2								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.6 pH		8.6 pH	8.6 pH			
			P1186								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				0.2 mg/kg		0.185 mg/kg	0.0000185 %		✓	
		205-912-4	206-44-0								
29	pyrene				0.22 mg/kg		0.203 mg/kg	0.0000203 %		✓	
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				2.6 mg/kg		2.4 mg/kg	0.00024 %		✓	
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				68 mg/kg	1.233	77.419 mg/kg	0.00774 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0645 %		

Key

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

WAC results for sample: TP05-02/09/2021-0.50

WAC Settings: samples in this Job do not 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 FAILS the Inert (Inert waste landfill) criteria.

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	4.2	3	5
2	LOI (loss on ignition)	%	8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.024	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.006	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0074	0.5	10
13	copper	mg/kg	0.029	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.055	0.5	10
16	nickel	mg/kg	0.0091	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	0.0052	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	7	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	170	500	800
26	TDS (total dissolved solids)	mg/kg	720	4,000	60,000

Key

	User supplied data
	Inert WAC criteria fail

Classification of sample: TP05-02/09/2021-1.00

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

Sample details

Sample name:	LoW Code:
TP05-02/09/2021-1.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
8.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 8.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				12 mg/kg	1.32	14.497 mg/kg	0.00145 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				1.9 mg/kg	1.142	1.986 mg/kg	0.000199 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				15 mg/kg	1.462	20.06 mg/kg	0.00201 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				32 mg/kg	1.126	32.966 mg/kg	0.0033 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	19 mg/kg	1.56	27.117 mg/kg	0.00174 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.1 mg/kg	1.353	0.124 mg/kg	0.0000124 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				2.7 mg/kg	1.5	3.706 mg/kg	0.000371 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				48 mg/kg	2.976	130.718 mg/kg	0.0131 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.47 mg/kg	2.554	1.098 mg/kg	0.00011 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				80 mg/kg	2.774	203.068 mg/kg	0.0203 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.8 pH		8.8 pH	8.8 pH			
			P1186								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				49 mg/kg	1.233	55.304 mg/kg	0.00553 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.05 %		

Key

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

WAC results for sample: TP05-02/09/2021-1.00

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.8	3	5
2	LOI (loss on ignition)	%	3.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	8.8	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.021	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	0.0055	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.038	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	4.1	10	150
23	sulphate	mg/kg	<10	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	110	500	800
26	TDS (total dissolved solids)	mg/kg	710	4,000	60,000

Key

User supplied data

Classification of sample: TP06-02/09/2021-0.50

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

Sample details

Sample name:	LoW Code:
TP06-02/09/2021-0.50	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
0.50 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
7.5%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.5% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				12 mg/kg	1.32	14.656 mg/kg	0.00147 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				0.63 mg/kg	3.22	1.876 mg/kg	0.000188 %	✓	
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				1.5 mg/kg	1.142	1.585 mg/kg	0.000158 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				16 mg/kg	1.462	21.631 mg/kg	0.00216 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				34 mg/kg	1.126	35.409 mg/kg	0.00354 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	28 mg/kg	1.56	40.399 mg/kg	0.00259 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				0.13 mg/kg	1.353	0.163 mg/kg	0.0000163 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				2.3 mg/kg	1.5	3.192 mg/kg	0.000319 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				39 mg/kg	2.976	107.369 mg/kg	0.0107 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				0.4 mg/kg	2.554	0.945 mg/kg	0.0000945 %	✓	
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				73 mg/kg	2.774	187.324 mg/kg	0.0187 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.7 pH		8.7 pH	8.7 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				56 mg/kg	1.233	63.895 mg/kg	0.00639 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0481 %		

Key

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

WAC results for sample: TP06-02/09/2021-0.50

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon) %	1	3	5
2	LOI (loss on ignition) %	3.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes) mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners) mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40) mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons) mg/kg	<2	100	-
7	pH	8.7	-	>6
8	ANC (acid neutralisation capacity) mol/kg	0.02	-	-
Eluate Analysis 10:1				
9	arsenic mg/kg	0.0021	0.5	2
10	barium mg/kg	<0.0005	20	100
11	cadmium mg/kg	<0.0001	0.04	1
12	chromium mg/kg	<0.0005	0.5	10
13	copper mg/kg	0.013	2	50
14	mercury mg/kg	<5.0e-05	0.01	0.2
15	molybdenum mg/kg	0.048	0.5	10
16	nickel mg/kg	0.0064	0.4	10
17	lead mg/kg	<0.0005	0.5	10
18	antimony mg/kg	<0.0005	0.06	0.7
19	selenium mg/kg	<0.0005	0.1	0.5
20	zinc mg/kg	<0.0025	4	50
21	chloride mg/kg	<10	800	15,000
22	fluoride mg/kg	5.4	10	150
23	sulphate mg/kg	<10	1,000	20,000
24	phenol index mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon) mg/kg	120	500	800
26	TDS (total dissolved solids) mg/kg	780	4,000	60,000

Key

User supplied data

Classification of sample: TP06-02/09/2021-1.00

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

Sample details

Sample name:	LoW Code:
TP06-02/09/2021-1.00	Chapter:
Sample Depth:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
1.00 m	Entry:
Moisture content:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
6.3%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 6.3% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number							
1	antimony { antimony trioxide }				<2 mg/kg	1.197	<2.394 mg/kg	<0.000239 %		<LOD
	051-005-00-X	215-175-0	1309-64-4							
2	arsenic { arsenic trioxide }				13 mg/kg	1.32	16.083 mg/kg	0.00161 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
3	boron { diboron trioxide; boric oxide }				<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8	215-125-8	1303-86-2							
4	cadmium { cadmium oxide }				1.7 mg/kg	1.142	1.82 mg/kg	0.000182 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
5	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				12 mg/kg	1.462	16.434 mg/kg	0.00164 %	✓	
		215-160-9	1308-38-9							
6	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<0.5 mg/kg	2.27	<1.135 mg/kg	<0.000113 %		<LOD
	024-017-00-8									
7	copper { dicopper oxide; copper (I) oxide }				29 mg/kg	1.126	30.594 mg/kg	0.00306 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
8	lead { lead chromate }			1	16 mg/kg	1.56	23.385 mg/kg	0.0015 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
9	mercury { mercury dichloride }				<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
10	molybdenum { molybdenum(VI) oxide }				3.2 mg/kg	1.5	4.498 mg/kg	0.00045 %	✓	
	042-001-00-9	215-204-7	1313-27-5							
11	nickel { nickel chromate }				41 mg/kg	2.976	114.339 mg/kg	0.0114 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
12	selenium { nickel selenate }				<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
	028-031-00-5	239-125-2	15060-62-5							
13	zinc { zinc chromate }				58 mg/kg	2.774	150.764 mg/kg	0.0151 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
14	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
15	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X	216-653-1	1634-04-4							
16	benzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	601-020-00-8	200-753-7	71-43-2							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	CLP index number	EC Number	CAS Number								
17	toluene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-021-00-3	203-625-9	108-88-3								
18	ethylbenzene				<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %			<LOD
	601-023-00-4	202-849-4	100-41-4								
19	xylene				<0.002 mg/kg		<0.002 mg/kg	<0.0000002 %			<LOD
	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]								
20	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %			<LOD
	006-007-00-5										
21	pH				8.9 pH		8.9 pH	8.9 pH			
			PH								
22	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
23	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-917-1	208-96-8								
24	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-469-6	83-32-9								
25	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-695-5	86-73-7								
26	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		201-581-5	85-01-8								
27	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-371-1	120-12-7								
28	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-912-4	206-44-0								
29	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		204-927-3	129-00-0								
30	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-033-00-9	200-280-6	56-55-3								
31	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-048-00-0	205-923-4	218-01-9								
32	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-034-00-4	205-911-9	205-99-2								
33	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-036-00-5	205-916-6	207-08-9								
34	benzo[a]pyrene; benzo[def]chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-032-00-3	200-028-5	50-32-8								
35	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-893-2	193-39-5								
36	dibenz[a,h]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	601-041-00-2	200-181-8	53-70-3								
37	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-883-8	191-24-2								
38	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
	602-039-00-4	215-648-1	1336-36-3								
39	sulfur { sulfur }				<1 mg/kg		<1 mg/kg	<0.0001 %			<LOD
	016-094-00-1	231-722-6	7704-34-9								
40	barium { barium sulphide }				52 mg/kg	1.233	60.101 mg/kg	0.00601 %		✓	
	016-002-00-X	244-214-4	21109-95-5								
41	coronene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
		205-881-7	191-07-1								
42	monohydric phenols				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %			<LOD
			P1186								
Total:									0.0429 %		

Key

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

WAC results for sample: TP06-02/09/2021-1.00

WAC Settings: samples in this Job do not constitute a single population.

WAC limits used to evaluate this sample: "Ireland"

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

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

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

WAC Determinands

Solid Waste Analysis			Landfill Waste Acceptance Criteria Limits	
#	Determinand	User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	0.9	3	5
2	LOI (loss on ignition)	2.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	<0.1	1	-
5	Mineral oil (C10 to C40)	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	<2	100	-
7	pH	8.9	-	>6
8	ANC (acid neutralisation capacity)	0.033	-	-
Eluate Analysis 10:1				
9	arsenic	<0.0002	0.5	2
10	barium	<0.0005	20	100
11	cadmium	<0.0001	0.04	1
12	chromium	0.0054	0.5	10
13	copper	0.0078	2	50
14	mercury	<5.0e-05	0.01	0.2
15	molybdenum	0.089	0.5	10
16	nickel	0.0066	0.4	10
17	lead	<0.0005	0.5	10
18	antimony	<0.0005	0.06	0.7
19	selenium	<0.0005	0.1	0.5
20	zinc	0.064	4	50
21	chloride	<10	800	15,000
22	fluoride	4.1	10	150
23	sulphate	<10	1,000	20,000
24	phenol index	<0.3	1	-
25	DOC (dissolved organic carbon)	80	500	800
26	TDS (total dissolved solids)	600	4,000	60,000

Key

User supplied data

Appendix A: Classifier defined and non CLP determinands

■ **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

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

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3 H226 , Asp. Tox. 1 H304 , STOT RE 2 H373 , Muta. 1B H340 , Carc. 1B H350 , Repr. 2 H361d , Aquatic Chronic 2 H411

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

CLP index number: 601-023-00-4

Description/Comments:

Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)

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

■ **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

CLP index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **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)

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.

Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)

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

■ **barium sulphide** (EC Number: 244-214-4, CAS Number: 21109-95-5)

CLP index number: 016-002-00-X

Description/Comments:

Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)

Additional Hazard Statement(s): EUH031 >= 0.8 %

Reason for additional Hazards Statement(s):

14 Dec 2015 - EUH031 >= 0.8 % hazard statement sourced from: WM3, Table C12.2

■ **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

■ **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)

Data source: CLP combined data

Data source date: 26 Mar 2019

Hazard Statements: Acute Tox. 3 H301 , Acute Tox. 3 H311 , Acute Tox. 3 H331 , Skin Corr. 1B H314 , Skin Corr. 1B H314 >= 3 % , Skin Irrit. 2 H315 1 & conc. < 3 % , Eye Irrit. 2 H319 1 & conc. < 3 % , Muta. 2 H341 , STOT RE 2 H373 , Aquatic Chronic 2 H411

Appendix B: Rationale for selection of metal species

antimony {antimony trioxide}

Worst case CLP species based on hazard statements/molecular weight and low solubility. Industrial sources include: flame retardants in electrical apparatus, textiles and coatings (edit as required)

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

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

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

chromium in chromium(VI) compounds {chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worst case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {nickel selenate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

sulfur {sulfur}

chemtest reports Elemental sulfur using this CAS

barium {barium sulphide}

No Cr VI in samples therefore worst case scenario not applicable.

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018

HazWasteOnline Classification Engine Version: 2021.246.4869.9247 (05 Sep 2021)

HazWasteOnline Database: 2021.246.4869.9247 (05 Sep 2021)

This classification utilises the following guidance and legislation:

WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018

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 2019 - UK: 2019 No. 720 of 27th March 2019

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

POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

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