now part of

Docksway Disposal Site, Newport

Area 2, Cell 4b Basal Clay Lining – CQA Validation Report

On behalf of **Newport City Council**

Project Ref: 14739/3538 | Rev: 00 | Date: February 2019

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Revision	Date	Description	Prepared	Reviewed	Approved
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1 Introduction

1.1 Background

1.1.1 Docksway Disposal Site is an active licensed waste disposal site located approximately 3km south of Newport City Centre, Gwent, and is centred on National Grid Reference ST 305 853. The site is operated by Newport City Council, referred to hereafter as NCC. The location of the site is shown on **Figure 1**.

1.1.2 The site is approximately split into a northern half (Area 1) and a southern half (Area 2). Area 1 is an unlined ('dilute and disperse') landfill that was operated under waste management licence (WML) number EAWML30058 and is now closed and in the aftercare phase, whilst Area 2 is an engineered containment landfill that is active and operated under Pollution Prevention Control (PPC) Permit No. DP3733BK.

1.1.3 Area 2 comprises five engineered landfill cells (Cells 1-5), as shown on **Figure 2**. Cells 1 to 3 have previously been constructed and are receiving waste, whilst Cell 4 is currently under construction and construction of Cell 5 has not currently started.

1.1.4 The Area 2 Engineering Design Philosophy[1] for the site describes the Area 2 design concept and this includes the construction of a basal Engineered Barrier System (EBS) above a natural geological barrier. Part of the EBS is a 1.2m thick engineered basal clay barrier with a hydraulic conductivity of no greater than $1x10^{-9}$ m/s, and this is created from imported clay material that is engineered on site. This maximum permeability is based on the conservative value of vertical hydraulic conductivity used for LandSim modelling work, as described in the Conceptual Model and Hydrogeological Risk Assessment for Area 2 – Landfill Extension, PBA 2005[2].

1.1.5 This Construction Quality Assurance (CQA) Validation report describes the works in Cell 4b carried out to construct and validate the engineered clay barrier part of the EBS as described above, and in general accordance with Environment Agency (EA) guidance document LFE4 – 'Earthworks in landfill engineering' (LFE4). The work was carried out in accordance with the CQA Plan and Performance Specification (CQA Plan) that was submitted to Natural Resources Wales (NRW) prior to commencement of the clay lining works. A copy of the CQA Plan is presented as **Appendix 2.**

1.1.6 Cell 4 has been split into two halves (Cell 4a and Cell 4b) for phasing reasons and to enable the two halves to be constructed in different financial years. Works on Cell 4a are proposed to be completed during 2019. A separate CQA Validation report will be produced for Cell 4a in due course.

1.2 Parties

1.2.1 The following parties were involved in the undertaking of this project as described below, and with duties as defined in the CQA Plan for the works, presented as **Appendix 2**.

1.2.2 **Client/Employer:** Newport City Council - responsible for preparing contract documents, drawings and specifications, reviewing Contractors (and Sub-Contractors) information, reviewing and agreeing amendments to contract documents, drawings and specifications, overseeing budgetary and contractual matters, provide day to day management of the works, surveying services, liaise with all parties.

1.2.3 **Contractor:** Jim Davis Civil Engineering Ltd (Contractor) – responsible for the preparation and construction of the works in accordance with the contract documents, drawings and specifications and to meet the requirements of the Employer and CQA Engineer.

1.2.4 **CQA Inspector:** Mr William Watt – Capita Infrastructure and Property Consulting Engineers and engaged by Newport City Council –responsible for the day to day management of the works in accordance with the CQA Plan and the contract documents, drawings and specifications, under the direction of the CQA Engineer.

1.2.5 **CQA Engineer:** Peter Brett Associates LLP, now part of Stantec (PBA) – responsible for reviewing the CQA Inspectors site diary, responsible for preparing the CQA Plan, technical queries during the works and preparation of the CQA Validation Report.

1.3 Scope of Works

1.3.1 The clay lining phase of work for Cell 4b follows on from base stabilisation works of the alluvial clays in the former river channels within the wider Cells 3 and 4 areas. The stabilisation works have been the subject of separate CQA validation and a separate CQA Validation Report (PBA, March 2016) previously submitted to and approved by Natural Resources Wales (NRW).

1.3.2 The area of Cell 4 is to be split into two halves, with both Cells permitted for the disposal of non-hazardous waste. The cells are formed into shallow bowl shapes following and enhancing the natural topography of the site area.

1.3.3 Cell 4b covers an area of approximately 14,000 m^2 and is designed with a gradient (for drainage) of 1(vertical):50 (horizontal) across the basal area towards a sump location at the lowest point within the cell area. The minimum thickness of engineered clay liner will be 1.2m across the base and up the sides of the bowl-shaped cell to the level of the surrounding ground level (where the cell edges are against side slopes). However, where the cell edges lie within the wider Area 2 and are not against existing side slopes, new engineered bunds will be created to a height of approximately 2m above the surface of the liner.

1.3.4 An internal engineered bund has previously been constructed on the western edge of Cell 3b as separation between Cell 3b and Cell 4b, and forms the western cell division bund shown on Drawing Number 14739/155/001 in **Appendix 3**.

1.3.5 A new internal engineered bund will be constructed on the northern edge of Cell 4a, separating Cell 4a from Cell 4b (cell division bund on Drawing Number 14739/155/001 in **Appendix 3**).

1.4 Clay Source and Suitability Testing

1.4.1 The clay used for the lining works described herein was imported from Wingmoor Farm, located at Bishops Cleeve in Gloucestershire. The source material has previously been used in the clay lining works for Cells 2 and 3 at the site and has therefore been approved previously.

1.4.2 The imported clay is excavated from the source site and comprises material from the Blue Lias Clay Formation. The clay used in this contract was from the same source as the clay used in Area 2 Cells 2 and 3 construction and therefore its suitability has been fully demonstrated (Report on Lias Clay Compaction Trial, Stage 2, Cell 2 – October 2008)[3].

1.4.3 Notwithstanding the previous suitability testing, additional material suitability testing was undertaken on samples of the source clay, and the results are presented in the CQA Plan. The source testing identified that the Optimum Moisture Content of the imported clay material for compaction purposes based on compaction testing using the 2.5 kg rammer method was 19%, the average plastic limit was 22%, the plasticity index was between 10% and 65%, and that the liquid limit was <90%.

1.4.4 The source testing results were used to define the ranges of acceptable limits for the clay. On the basis of the OMC and average plastic limit obtained during the source testing, the lower acceptable moisture content was set at 19%. The upper acceptable moisture content was set

at the maximum moisture content for the material to achieve the minimum undrained shear strength of 50kPa.

1.4.5 Previous use of the source material on this site indicated that the material could achieve permeability values well below the maximum allowable value (1 x 10^{-9} m/s) if the material was sufficiently compacted in accordance with the requirements given in LFE4 (i.e. <5% air voids). In addition to this, permeability test results from remoulded samples of the source material indicated that the source clay was capable of achieving the permeability requirements of the engineered clay liner.

1.5 Methodology and Plant

1.5.1 The works were carried out in general accordance with the CQA Plan and using the methodology and plant described in the CQA Inspectors' CQA Weekly Reports, presented in **Appendix 1**, and summarised below. This methodology was developed following a field compaction trial, as described in Section 2.2.

1.5.2 The imported clay was stockpiled (in part) on site, to facilitate progress once the works started. Previous experience of working the imported clay from Bishop's Cleeve indicated that it sometimes contains clods of material and the source evaluation indicated that some of it was too dry to be efficiently worked and remoulded. Therefore, the adopted methodology required the material to be conditioned by the addition of water to the material in the stockpile and working the material within the stockpile area to break the clods down before the material was transported to the cell area being lined. The conditioned material was then placed in layers and further worked during spreading by the 4 tonne bulldozer. Samples of material were taken for acceptability testing and then the material was compacted with a CAT CS-573D according to the adopted specification following the site compaction trial (see Section 2.2). Following compaction, samples of the compacted material were obtained using the core cutter method (BS 1377-9:1990 – In Situ tests) and transported to the UKAS accredited laboratory for compliance testing (see Sections 2.3 and 2.4).

1.5.3 The methodology that was developed for dealing with compliance failures was generally as described here and is specific to the reason for failure.

- Any areas of the cell base with sample test results outside the specified moisture content range were ripped through and re-conditioned before being recompacted.
- Where in situ density test results indicated greater than 5% air voids, a second core from the test cell area was submitted to the laboratory for testing. If the second in situ density test indicated air voids less than 5%, the area was accepted without the requirement for remediation and the failed test result was accepted as being within the total allowance for failures. If the re-sample also indicated greater than 5% air voids, then the affected area was ripped through, reconditioned as appropriate and recompacted.
- Areas of the cell with in situ density results indicating less than 0% air voids were accepted on the basis of the variations in Particle Density, and in accordance with guidance in LFE 4.

2 CQA Requirements

2.1 CQA Plan

2.1.1 A CQA Plan, describing the works to be carried out, defining the roles and responsibilities of the parties involved and the quality procedures to be adopted during the construction works was produced by the CQA Engineer and submitted to NRW for approval prior to commencement of the works. A copy of the CQA Plan is presented as **Appendix 2**.

2.2 Compaction Trial

2.2.1 A compaction trial was carried out prior to commencement of the clay lining works, in accordance with the CQA Plan. The objective of the compaction trial was to determine the optimum working methods and material acceptability requirements to achieve the minimum requirements of the engineered clay barrier part of the EBS, described in Section 1.1.4.

2.2.2 The results of the compaction trial informed the proposed methodology that was adopted by the Contractor. The adopted methodology required the imported clay to be placed in 300mm thick (pre compaction) layers, each receiving 12 passes of a CAT CS-573D vibrating roller with padfoot shell kit to achieve the maximum allowable permeability and to provide satisfactory remoulding of any clods within the imported clay (individual clod sizes to be <2/3 layer thickness).

2.3 Acceptability and Compliance

2.3.1 The engineered clay barrier must achieve permeability no greater than $1x10^{-9}$ m/s and this has been determined through laboratory testing of samples of the compacted clay material, taken systematically during the lining works at a minimum frequency of 1 per $2000m^3$, in accordance with the CQA Plan.

2.3.2 To provide further evidence that the engineered basal clay barrier has achieved the maximum permeability requirements, the Contractor is also required to demonstrate that the compacted clay contains less than 5% air voids, determined through laboratory testing of the compacted clay material, taken systematically during the lining works at a frequency of 1 per 25m x 25m grid cell (the works were set out using a 25m by 25m grid cell system, as described in the CQA Inspector's weekly progress reports, presented in Appendix 1.

2.3.3 The minimum thickness of the engineered clay barrier is 1.2m, and this is demonstrated through on site checks as work progresses, and through pre-commencement and post construction surveys.

2.3.4 Operational controls during the basal clay lining works provided the Contractor with a framework to enable the consistency of the condition of the imported clay material to be controlled. The operational controls included placement of the clay within a moisture content range (19% to 26%), determined from the source testing and the compaction trial, and to optimise the workability of the material to ensure the objectives and compliance requirements were met.

2.4 Laboratory Accreditation

2.4.1 The initial suitability testing was completed by Geolabs Ltd, acceptability and compliance (in situ density) testing was completed by CJ Associates Ltd and subsequent permeability testing was subcontracted by CJ Associates to Geolabs. These labs are UKAS accredited laboratories, for testing in accordance with BS1377 Part 9: 1990 BS1377 Clause 2.4 – Core cutter method for cohesive soils free from coarse grained material (CJ Associates) and Part 6: 1990 Clause 6

– Determination of Permeability in a triaxial cell (Geolabs). The Geolabs UKAS accreditation number is 1982 and the CJ Associates UKAS accreditation number is 1429.

2.5 CQA Records

2.5.1 The CQA records of relevance to this CQA Validation Report are the laboratory certificates for the permeability testing and the in situ density testing, the drawings showing the cell locations, and the CQA Inspector's weekly progress records. These CQA records are all presented within the appendices.

3 Works Progress

3.1 General

CQA Inspector's Weekly Report

3.1.1 The Contractor commenced the basal clay lining works in Cell 4b on 18th June 2018 and completed the basal clay lining works in Cell 4b on 19nd October 2018.

3.1.2 The CQA Inspector has recorded progress over the 18 week period in weekly reports that are presented in **Appendix 1**. The CQA Inspector was present on site during the works and recorded the weather, progress, technical issues, sampling and testing for each week and relevant photographs within the weekly reports.

Progress

3.1.3 As described in the CQA Inspector's Reports, approximately 54,000 tonnes of imported clay material (approximately 27000m^3) was placed under the direction of the CQA Inspector, and in accordance with the CQA Plan, across Cell 4b during the 18 week period. There are a total of 35 full and partial grid cells that cover the plan area of Cell 4b, and with a pre compacted layer thickness of 300mm, a total of 5 layers of material have been placed under CQA to achieve the minimum 1.2m thickness for the engineered basal clay barrier part of the EBS.

3.1.4 In areas of engineered bunds, additional layers were placed under CQA to achieve the design levels. As the bund construction progressed, and levels increased, the plan areas of the bunds decreased and therefore CQA sampling and testing decreased on a pro rata basis whilst maintaining the minimum testing requirements.

3.1.5 Weekly and daily progress involving earthworks of this nature are entirely dependent on favourable weather conditions and the speed of compliance testing, and therefore the weekly reports show variations in progress on a week by week basis.

4 Acceptability Testing

4.1 Moisture Content and Atterberg Limits

4.1.1 In general accordance with the CQA Plan, bulk samples of the conditioned material were taken from within the grid cells following placement and spreading but prior to compaction. The bulk samples were submitted to the laboratory for moisture content and Atterberg limit testing.

4.1.2 The CQA Inspector indicates that there are a total of 169 laboratory tests completed for moisture content and Atterberg limits. The results are in accordance with typical clay liner properties provided in LFE4, and predominantly in accordance with the specified acceptability limits (except for four exceptions, see Section 6).

- Moisture Content Range - 16.3% – 29.2%
- Moisture Content Average – 21.5%
- Liquid Limit Range - 43% - 52%
- Liquid Limit Average – 48%
- Plastic Limit Range – 19% - 23%
- Plastic Index Range – 21% - 31%

4.1.3 The number of test results provides a test frequency of 1/160m^3, and this is significantly greater frequency than the minimum acceptability testing frequency of 1/250m^3 (LFE4).

5 Compliance Testing

5.1 Moisture Content

5.1.1 The CQA Inspector indicates that there are a total of 212 laboratory tests for moisture content testing of core cutter samples following completion of compaction in the grid cells across Cell 4b. The results indicate a range of results predominantly within the specification requirements (except for eleven exceptions/failures, see Section 6) and an average moisture content of 22% (excluding the failures).

5.2 Field Dry Density

5.2.1 The CQA Inspector indicates that there are a total of 201 diamond black and diamond grey results (in accordance with LFE4) for Cell 4b, there were no diamond white results recorded. Diamond black results are samples with moisture contents within specification range and with less than or equal to 5% air voids, diamond grey results are samples with moisture contents within specification range and which plot above the 0% air voids line, and diamond white results are samples with moisture contents within specification range and with greater than 5% air voids.

5.2.2 Therefore, 100% of the total results are diamond black or diamond grey, and the results are compliant with LFE4 and meet the acceptability criteria.

5.2.3 Excluding retests and duplicates, the total number of standalone laboratory certificates for field dry density is 193, and this indicates a test frequency of 1/140m^3 which is a significantly greater frequency than the guidance frequency of 1/250m^3 provided in LFE4.

5.3 Permeability

5.3.1 There are a total of 18 laboratory test certificates for permeability testing of core samples obtained following completion of compaction across Cell 4b. The samples were obtained at a frequency of approximately 1/1500m^3 which is a greater frequency of testing than the CQA Plan requirement of 1/2000m^3. The results indicate that all of the permeability results are below the maximum allowable value of 1 x 10^{-9} m/s, as shown in the table below. The lab certificates for the permeability testing are presented in **Appendix 4.**

Table 5-1 Cell 4b Permeability Results

Cell Reference	Permeability Value (m/s)	Comments
C2-L1	1.4 x 10^{-10} m/s	Lab certificate is mis labelled C1L1 – see CQA Inspectors weekly report No. 5
C2-L1	9.6 x 10^{-11} m/s	Lab certificate is mis labelled B2L1 – see CQA Inspectors weekly report No. 5
B2-L3	9.7 x 10^{-11} m/s	-
D2-L4	6.8 x 10^{-10} m/s	-

F3-L1	1.6 x 10^{-10} m/s	-
F4-L2	1.1 x 10^{-10} m/s	Lab certificate is mis labelled E4L2 – see CQA Inspectors weekly report No. 14
D4-L9	1.1 x 10^{-10} m/s	-
E5-L2	3.0 x 10^{-11} m/s	-
E3-L3	1.2 x 10^{-10} m/s	-
D3-L1	6.1 x 10^{-11} m/s	-
E2-L4	9.0 x 10^{-11} m/s	-
F2-L5	4.2 x 10^{-10} m/s	-
E3-L5	4.4 x 10^{-11} m/s	-
G2-L6	1.6 x 10^{-10} m/s	-
C1-L7	7.6 x 10^{-11} m/s	-
C2-L7	1.9 x 10^{-11} m/s	-
D2L8	1.1 x 10^{-10} m/s	-
C3L4	7.8 x 10^{-11} m/s	-

5.4 Undrained Shear Strength

5.4.1 A total of 624 readings of undrained shear strength readings were taken using a Hand Shear Vane during the clay lining works in Cell 4b. These indicate shear strengths between 55kPa and +150kPa which are all higher than the minimum 50kPa set out within the CQA Plan.

5.5 Survey

5.5.1 NCC has undertaken pre and post clay lining surveys to demonstrate the basal liner thickness across Cell 4b. The as built drawings and cross sections contained in Appendix 5 indicate that the minimum required thickness of basal liner of 1.2m has been constructed across Cell 4b.

6 Non-Conformities

6.1 General

6.1.1 Non conformities in terms of acceptability and compliance failures have generally been dealt with during progress of the work, as described in the CQA Inspector's weekly progress reports. That is to say that where there have been failures due to moisture content or percentage air voids, the grid cells where these failures were located have generally been rejected and reworked. This means the non-compliant layer was ripped up, reconditioned, recompacted and retested. Where this has been completed and the subsequently recompacted and retested material has passed and been accepted, the original failures are no longer considered to be non-conformities.

6.1.2 There are ten moisture content results from the bulk samples that were part of the acceptability testing and that were indicated to be marginally outside of the specification range for moisture content. These results were correlated with the core cutter results from the same cells and if the moisture contents from the cores were within the specification range and the air voids percentage was <5% then the results have been accepted. It is considered that these results have not adversely affected the ability of the material to be compacted and to achieve the density and permeability requirements – it is not considered that any remedial action is required or appropriate.

6.1.3 There are seven moisture content results from the core cutter samples that were part of the compliance testing and that were indicated to be outside of the specification range. These grid cell locations are B4-B5-C1, B2-B5-C1, D4-L1-C2, D4-L1-C1, C4-L(-6)-C1, E1-L2-C1 and B2-L4-C1 where recorded moisture contents were between 17% and 18% (below minimum range of 19%), and F3-L4-C1 where the recorded moisture content was 27% (above maximum range of 26%). C4-L(-2)-C1 was rejected due to air voids of 6.77%, which is above the criteria of <5%. All of these locations were reworked as explained in paragraph 6.1.1 above and subsequently retested. Therefore, these locations are no longer considered non-conformities, and it is not considered that any remedial action is required or appropriate.

7 Conclusions

7.1 General

7.1.1 The CQA Inspector's reports and the results of the laboratory testing indicate that the Cell 4b basal clay lining works have been completed successfully and in accordance with the CQA Plan and LFE4.

7.1.2 As built drawings and cross sections supplied by NCC indicate that the minimum thickness of the engineered basal clay liner is at, or exceeds, 1.2m which is the minimum thickness required, and that the minimum design gradients have been achieved.

7.1.3 The in situ density results indicate that the minimum requirements of 90% of the total samples comprising diamond black and diamond grey results, as set out in guidance document LFE4 have been achieved.

7.1.4 The permeability results indicate that permeability values significantly below the maximum allowable value (1×10^{-9} m/sec) have been achieved for each of the samples.

7.1.5 It is considered that the basal clay lining works have been completed in general accordance with the CQA Plan, LFE4 and the engineering design philosophy.

References

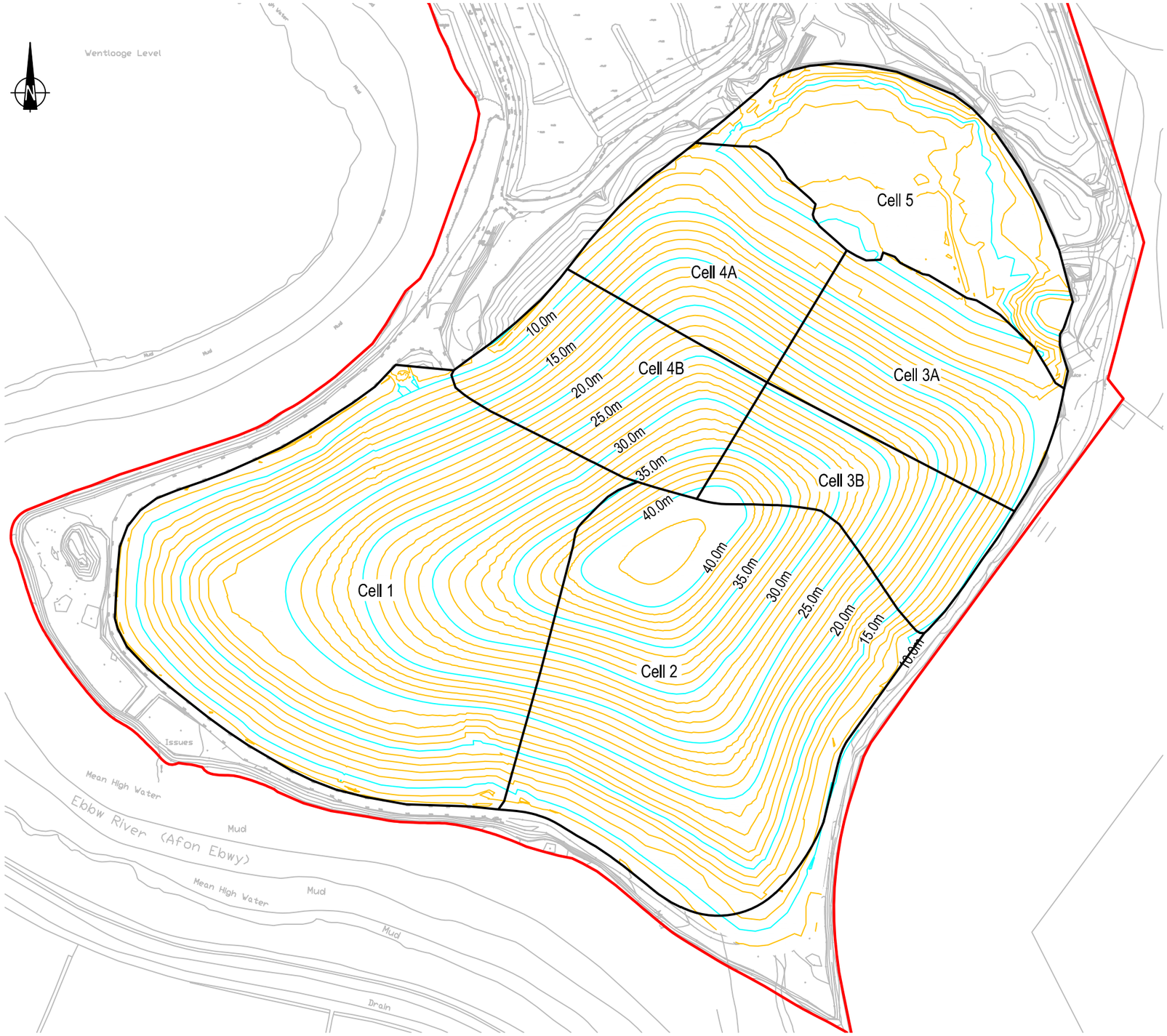
[1] Docksway Landfill Site, Area 2 Engineering Design Philosophy (Rev A) – Peter Brett Associates, 2005.

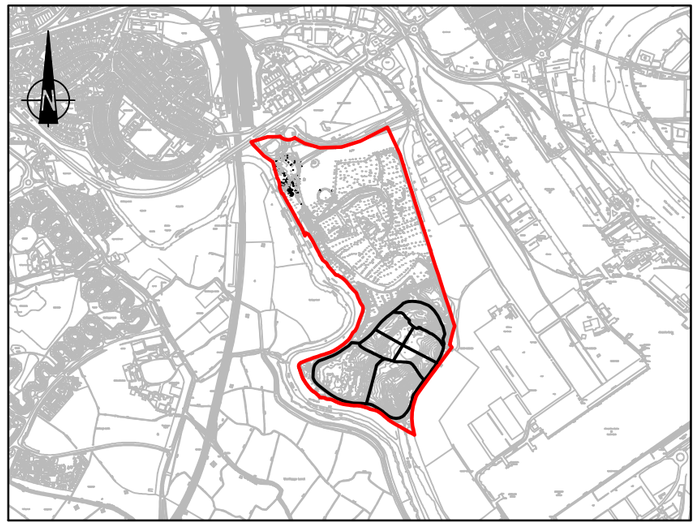
[2] Docksway Disposal Site, Newport. Conceptual Model and Hydrogeological Risk Assessment for Area 2 – Landfill Extension. Peter Brett Associates, April 2005.

[3] Docksway Landfill, Newport City Council. Report on Lias Clay Compaction Trial Stage 2, Cell 2. Peter Brett Associates, October 2008.

Figures


Site Location
Area 1
Area 2
CASNEWYDD/
NEWPORT
Wentlooge
Level
Wentlooge
Level
Afon Ebwy
Afon Wysg
Malpas
Bettws
Ty-Du/
Rogerstone
Rhiwderin
Garth
Bassaleg
Duffryn
Cleppa
Park
Marshfield
Llanwern
Steelworks
Caerleon
Roman Fort
Caerleon Roman
Amphitheatre
Caerleon
(BSCA)/ CAERLEON
Usk
Usk
Crindau
Barrack
Hill
East
Usk
Marshes
St Julians
Summerhill
Beechwood
Maindee
Allt-yr-yn
Gold
Tops
Newport
Newport Castle
Ridgeway
High
Cross
Caerau Park
Glasllwch
Stow
Park
Stelvio
Level of
Mendalgief
Pillgwenlly
St Woolos
Baneswell
Somerton
Uskmouth
Nash
Saltmarsh
Pye
Corner
Malpas Road
Caerphilly Road
Forge Road
Cardiff Road
Docksway
Usk Way
Spytty Road
Christchurch
Alway
Lawrence
Hill
The Village
Ty Du Farm
Maes-glas
Duffryn
Court
Gaer
Pentre-Poeth
Graig Y Saeson
Cefn
Llogell
Coedcernyw/
Coedkernew
Llanwern
Golf Club
Llanwern
Park
Lighthouse
Park
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Lighthouse
Llanwern
Steelworks
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DOCKSWAY DISPOSAL SITE
AREA 2

PRE SETTLEMENT RESTORATION CONTOURS

Date	30.03.2015
A3 Scale	1:5000
Drawn by	davco
Checked by	VKR
Figure Number	2

Appendix 1 CQA Inspector's Weekly Reports

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 01 WE 24/06/18

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

Project Ref: 2506
Date: 22-06-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		22-06-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

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Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspectior. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Mixture of fine dry weather on Monday shifting to intermittent light showers midweek drying up on Thursday and Friday.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile was slightly dry with some clods and larger pieces requiring the addition of water and breaking up.

3.2 Work Progress

Work was undertaken to the level B2/L3, C2/L2, D2/L2, D1/L2, C1/L2.

Work was undertaken to fill the depressions within cells D2/L-1 recorded as minus (-) layers. Work was undertaken to fill the depressions within cells to the level C3/L-2, C4/L-2 and D4/L-2 recorded as minus (-) layers.

An additional layer was installed in D1/L2A and C1/L2A to regrade and tie into the existing lining recorded as (2A) layers

The material within the depressions was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2. Existing silt material at the base of the trench, silts deposited by recent surface water, was removed off site.

The material within the additional layer C1 and D1 was tied in within 300mm bench and tapered into the CQA cells.

Leachate from the existing cell was captured within a grip and pumped for disposal.

3.3a Additional Layers

Minus (-1&-2) layers within C3, C4, D2, and D4
Additional grading and benching layer 2A within C1 and D1

3.3 Layer 1

B2, C1, C2, D1, D2

3.4 Layer 2

B2, C2, D2, (D1, C1) part

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3.5 Layer 3
B2

3.6 Layer 4
No Work undertaken

3.7 Layer 5
No Work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

14 no core cutter samples were taken this week a spare was taken at each location. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
14 results plus 7 spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

One test C4L-2 was identified as 7% air voids and retested at 4.6% the contractor was instructed to recondition cells C3L-2, C4L-2 and D4L-2 for retest.

4.2 Permeability Samples

One sample and one spare was taken for B2/L3 on 22 June 18.
One sample was taken 19 June 18 and one Spare 20 June 18 was taken for C2/L1.
no results have been received.

4.3 MC and PI,

None received in this period.

4.4 Particle Distribution and Particle Density

None received in this period.

4.5 Hand Shear Vane

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Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 130Kn/m^2, except cell D2L1, C4L-1, C1L1& C1L2A where minimum reading was 101Kn/ m^2 was recorded.

5.0 Results Summary

All Test results were passed except C4L-2.
Permeability result are awaiting testing.

6.0 Problems Encountered

None

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
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Appendix 1 - Progression Plan

Streetscene
Y-Strydynun

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Grid Ref	-L1		-L2				L1		L2A		L2		L3		L4		L5		L6		L7		L8	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																								
Date																								
A2																								
Date																								
A3																								
Date																								
B1																								
Date																								
B2							MC&PI/D&MC	P Sh-max			MC&PI/D&MC And S	P Sh-max	MC&PI/**D&S**/D&MC And S	P Sh-max										
Date							T-19/06/18	P 20/06/18			T-20/06/18	P 22/06/18	22/06/18	P 25/06/18										
B3																								
Date																								
C1							MC&PI/**D&S**/D&MC	P Sh-125	MC&PI/D&MC and S	P Sh-120	MC&PI/**D&S**/D&MC And S	P Sh-max												
Date							T-20/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18												
C2	N/A	N/A (D2-1)					MC&PI/**D&S**/D&MC**/P**	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max												
Date	18/06/18						T-19/06/18	P-20/06/18			21/06/18	22/06/18												
C3	N/A	P (C4L-1)	N/A (C4L-2)		Rework																			
Date	20/06/18		22/06/18	F 25/06/18																				
C4	MC&PI/**D&S**/D&MC	P-Sh-101	MC&PI/D&MC And S	F >5% voids Sh-max	Rework																			
Date	20/06/18		22/06/18	F 25/06/18																				
C5																								
Date																								
D1							MC&PI/D&MC	Sh-max	N/A	P (C1L2A)	MC&PI/D&MC And S	P Sh-max												
Date							T-19/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18												
D2	N/A	N/A (C2L-1)					MC&PI/**D&S**/D&MC	P Sh-120			MC&PI/**D&S**/D&MC And S	P Sh-max												
Date	18/06/18						T-19/06/18	P-20/06/18			21/06/18	22/06/18												
D3																								
Date																								
D4	N/A	P (C4L-1)	N/A		Rework																			
Date	20/06/18		22/06/18	F 25/06/18																				
D5																								
Date																								
E1																								
Date																								
E2																								
Date																								
E3																								
Date																								
F1																								

Streetscene
Y-Strydynun

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Date																								
F2																								
Date																								
F3																								
Date																								
G1																								
Date																								
G2																								
Date																								

P- Pass

F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Cell Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18		
B2-L3		22/06/18		

Bund

Layer	Ref	Date	Pass/Fail

Streetscene
Y-Strydynun

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Appendix 2 - Test Results

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**492 - 494**		

Site Reference:	**GT1 - GT3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-L1-C1	Core 2 C2-L1-C1	Core 3 D2-L1-C1		
Bulk Density	2.08	2.06	2.08		
Moisture Content	22	21	22		
Dry Density	1.71	1.70	1.71		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	0.5	2.4	0.5		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 20/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**495**		

Site Reference:	**GT4 - GT6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 4 B2-L1-C2	Core 5 C2-L1-C2	Core 6 D2-L1-C2		
Bulk Density	2.09	2.07	2.07		
Moisture Content	21	21	22		
Dry Density	1.73	1.71	1.70		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.1	1.6	1.2		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**496**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L1-C1	Core 2 C1-L1-C2	Core 3 D1-L1-C1	Core 4 D1-L1-C2	
Bulk Density	2.10	2.07	2.07	2.09	
Moisture Content	20	21	23	20	
Dry Density	1.75	1.71	1.69	1.74	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.1	1.1	0.2	1.8	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**497**		

Site Reference:	**Core 5 - Core 6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 5 C4-L1-C1	Core 6 C4-L1-C2			
Bulk Density	2.08	2.13			
Moisture Content	21	20			
Dry Density	1.72	1.78			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	1.6	0.2			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**498**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**21/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-L2-C1	Core 2 C2-L2-C1	Core 3 C1-L2A-C1	Core 4 D2-L2-C1	
Bulk Density	2.07	2.06	2.07	2.10	
Moisture Content	19	20	22	21	
Dry Density	1.73	1.72	1.70	1.74	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	3.1	3.6	0.9	0.0	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee, Materials and Field Testing Director	Date 22/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**505**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-2 (noted added WW 25/06/18

Location Reference	Core 1 C4-L2-C1	Core 2 D1-L2-C1	Core 3 C1-L2-C1	Core 4 B2-L3-C1	
Bulk Density	2.00	2.04	2.08	2.05	
Moisture Content	19	20	20	21	
Dry Density	1.68	1.70	1.74	1.70	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	7.0	4.2	2.6	2.8	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 23/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**506**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-2 (noted added WW 25/06/18

Location Reference	Core 1 C4-L2-C2				
Bulk Density	2.05				
Moisture Content	19				
Dry Density	1.73				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	4.6				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 24/06/2018	Fig

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
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Casnewydd

Appendix 3 – Field Logs

Available on request

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Appendix 4 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
507	B2-L1 19.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
508	B2-L1 19.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
509	B2-L1 19.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
510	C2-L1 19.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
511	C2-L1 19.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	125	
512	C2-L1 19.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
513	D2-L1 19.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	115	
514	D2-L1 19.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
515	D2-L1 19.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
516	C1-L1 20.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
517	C1-L1 20.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
518	C1-L1 20.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
519	D1-L1 20.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
520	D1-L1 20.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
521	D1-L1 20.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
522	C4-L1 20.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
523	C4-L1 20.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	101	
524	C4-L1 20.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
525	B2-L2 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
526	B2-L2 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
527	B2-L2 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
528	C2-L2 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
529	C2-L2 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
530	C2-L2 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
531	C1-L2A 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
532	C1-L2A 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
533	C1-L2A 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	128	
534	D2-L2 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
535	D2-L2 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
536	D2-L2 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
537	C4-L2 22.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
538	C4-L2 22.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
539	C4-L2 22.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
540	C1-L2 22.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
541	C1-L2 22.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
542	C1-L2 22.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
543	D1-L2 22.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
544	D1-L2 22.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
545	D1-L2 22.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
546	B2-L3 22.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
547	B2-L3 22.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
548	B2-L3 22.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

Streetscene
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Appendix 5 – PI, PL, MC, LL Results

None received this period

Streetscene
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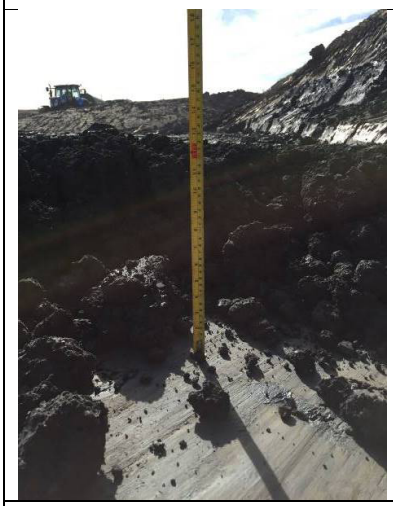
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Appendix 6 – Photographs

Streetscene
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Filling B2 layer 2	**Leachate management D1 layer 1**
	
C4 layers Minus 1	**Benching Detail C1 layer 2A And removal of contaminated material**
	
Additional layer D1 layer 2A	

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Environmental Services

Title: Docksway Waste Disposal
Site Cell 4 Containment

Construction Quality Assurance
Report No 02 WE 01/07/18

Streetscene
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Project Ref: 2506
Date: 01-07-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		01-07-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspectior. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Consistently hot, dry weather on Monday to Friday.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile was slightly dry with some clods and larger pieces requiring the addition of water and breaking up.

Up to the 28 June 2018, 8475m^3 of material was delivered to site.

3.2 Work Progress

Work was undertaken to the level B2/L5, C1/L5, C2/L5, D1/L5 and D2/L5.

The material in B2/L4 was reworked following a failed moisture content and voids

Work was undertaken to fill the depressions within cells to the level C3/L-4, C4/L-4 and D4/L-4 recorded as minus (-) layers.

The material within the depressions was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

The material within the layer C1 and D1 was tied in within 300mm bench and tapered into the CQA cells.

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

1 no 10T dumper broke down 1500, 27/06/18 and taken off site. A 5T dumper was used from 1500 until that broke down at 1700 27/06/18. A 15T dumper was used on site 0730 28/06/18 plus the 10T and mended 5T dumper.

3.3a Additional Layers

Minus (-2) was reprocessed and tested to confirm compliance. Layer s to -3 were installed within cells C3, C4, D2, and D4

3.3b Levelling the Area

Following a survey review, the area within cells D2, E1, E2, F1, F2 and G2 was levelled with a maximum 750mm material removed. Work was undertaken from 1400pm 25 June 2017 to 1800pm 27 June 2017 with 1 excavator full time plus 2 dumpers and dozer part time. The

production of the clay layers reduced with plant taken from the normal operation, although overall output remaining as previous days as the working hours were extended to 1800pm.

3.3 Layer 1
E1, F1, G1

3.4 Layer 2
No Work undertaken

3.5 Layer 3
C1, C2, D1, D2

3.6 Layer 4
B2, C2, D1, D2,

3.7 Layer 5
B2, C1, C2, D1, D2,

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

20 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
20 results plus 0 spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

One cell B2L4 retested and determined suitable.

4.2 Permeability Samples

One sample and one spare was taken for D2/L4 on 27 June 18.
no results have been received.

4.3 MC and PI,

None received in this period.

4.4 Particle Distribution and Particle Density

None received in this period.

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4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 130Kn/m^2, with a minimum reading was 106Kn/ m^2 recorded.

5.0 Results Summary

All Test results were passed.
Permeability result are awaiting testing.

6.0 Problems Encountered

None

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Appendix 1 - Progression Plan

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Grid Ref	-L1		-L2				-L3		-L4		L1		L2A		L2		L3		L4				L5		L6		L7		L8	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														
Date																														
A2																														
Date																														
A3																														
Date																														
B1																														
Date																														
B2											MC&PI/D&MC	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/ **D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120						
Date											T-19/06/18	P 20/06/18			T-20/06/18	P 22/06/18	22/06/18	P 25/06/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18	28/06/18	P 29/06/18						
B3																														
Date																														
C1											MC&PI/ **D&S**/D&MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120	MC&PI/ **D&S**/ D&MC And S	P Sh-max	MC&PI/ D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh-106			MC &PI/ D&MC	P Sh-max Need Core						
Date											T-20/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18	26/06/18	P 27/06/18	26/06/18	P 29/06/18			T-29/06/18							
C2	N/A	N/A (D2-1)									MC&PI/ **D&S**/D&MC/**P**	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/ **D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/ **D&DS/** D&MC And S	Sh-106						
Date	18/06/18										T-19/06/18	P- 20/06/18			21/06/18	22/06/18	25/06/18	P 26/06/18	26/06/18	P- 28/06/18			28/06/18	P 29/06/18						
C3	N/A	P (C4L-1)	N/A (C4L-2)		P (C4L-2)		N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)																				
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18																				
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	P Sh-101		MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	P Sh-122																				
Date	20/06/18		22/06/18	F 25/06/18	P 26/06/18		26/06/18	P- 28/06/18	26/06/18	P 01/07/18																				
C5																														
Date																														
D1											MC&PI/D&MC	Sh-max	N/A	P (C1L2A)	MC&PI/ D&MC And S	P Sh-max	MC&PI/ **D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC &PI/ **D&S** /D&MC	P Sh-max						
Date											T-19/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18	25/06/18	P 26/06/18	27/06/18	P 29/06/18			T-29/06/18	P- 01/07/18						
D2	N/A	N/A (C2L-1)									MC&PI/ **D&S**/D&MC	P Sh-120			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/ **D&DS/** D&MC And S	Sh-108						
Date	18/06/18										T-19/06/18	P- 20/06/18			21/06/18	22/06/18	25/06/18	P 26/06/18	27/06/18	P- 28/06/18			28/06/18	P 29/06/18						
D3																														
Date																														
D4	N/A	P (C4L-1)	N/A		P (C4L-2)		N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)																				
Date	20/06/18		22/06/18	F 25/06/18	26/06/18		26/06/18	P- 28/06/18	28//06/18	P 01/07/18																				
D5																														
Date																														
E1											MC&PI/ D&MC	P Sh-max																		

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Date											T-29/06/18	P-01/07/18																		
E2																													
Date																													
E3																													
Date																													
F1											MC&PI/ **D&S**/D&MC	P Sh-max																		
Date											T-29/06/18	P-01/07/18																		
F2																													
Date																													
F3																													
Date																													
G1											MC&PI/ D&MC	P Sh-max																		
Date											T-29/06/18	P-01/07/18																		
G2																													
Date																													

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Cell Ref	**Result**	**Date Sampled**	**Date Testing commenced**	**Date Testing complete**
C2-L1		19/06/18 & Spare 20/06/18		
B2-L3		22/06/18		
D2-L4		27/06/18		

Bund

Layer	**Ref**	**Date**	**Pass/Fail**

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Appendix 2 - Test Results

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**559**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**25/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-2 layer WW 26/06/18

Location Reference	Core 1 C2-L3-C1	Core 2 D2-L3-C1	Core 3 C4-L2-C1	Core 4 D1-L3-C1	
Bulk Density	2.06	2.11	2.03	2.06	
Moisture Content	21	19	22	20	
Dry Density	1.71	1.77	1.66	1.71	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.7	1.4	2.5	2.7	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 26/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**560**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**26/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L3-C1	Core 2 B2-L4-C1			
Bulk Density	2.10	2.04			
Moisture Content	20	17			
Dry Density	1.76	1.74			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	1.5	6.6			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 27/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**561**		

Site Reference:	**Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**26/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 2 B2-L4-C2				
Bulk Density	2.04				
Moisture Content	22				
Dry Density	1.68				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	2.1				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 28/06/2018

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**573**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**27/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-3 Layer WW 28/06/18

Location Reference	Core 1 C4-L3-C1	Core 2 C2-L4-C1	Core 3 D2-L4-C1	Core 4 B2-L4-C1	
Bulk Density	2.12	2.08	2.03	2.04	
Moisture Content	19	21	22	21	
Dry Density	1.78	1.71	1.66	1.69	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.4	0.8	2.3	3.5	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 28/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**574**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**28/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L4-C1	Core 2 D1-L4-C1	Core 3 B2-L5-C1	Core 4 C2-L5-C1	Core 5 D2-L5-C1
Bulk Density	2.03	2.12	2.06	2.07	2.08
Moisture Content	22	20	20	21	21
Dry Density	1.66	1.77	1.71	1.71	1.72

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.3	0.5	3.1	1.6	1.1

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 29/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**586**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**29/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-4 make-up layer WW 01/07/18

G1L1 layer WW 01/07/18

Location Reference	Core 1 C4-L4-C1	Core 2 E1-L1-C1	Core 3 F1-L1-C1	Core 4 C1-L1-C1	Core 5 D1-L5-C1
Bulk Density	2.08	2.09	2.06	2.06	2.09
Moisture Content	20	19	22	22	21
Dry Density	1.73	1.75	1.68	1.69	1.73

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.7	2.3	0.8	1.0	1.0

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 30/06/2018	Fig

Streetscene
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Appendix 3 – Field Logs

Available on request

Streetscene
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Appendix 4 – Hand Shear Vane
Awaiting Records

Streetscene
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Appendix 5 – PI, PL, MC, LL Results

None received this period

Streetscene
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Appendix 6 – Photographs

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Site extents Tuesday 26 June 2018 with reprofiling existing area



B2L4 Reprocessing Material following filed test



D1L4 benching and tie-in to existing layer



Area profiled in D3, E1, E2, E3, F1, F2, G1

Streetscene
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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 03 WE 08/07/18

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Project Ref: 2506
Date: 08-07-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		08-07-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Consistently hot, dry weather on Monday to Friday.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile was slightly dry with some clods and larger pieces requiring the addition of water and breaking up.

Up to the 05 July 2018, 13,058.9m^3 of material was delivered to site.

3.2 Work Progress

Work was undertaken to the level B2/L6, C2/L6, D2/L6, E1/L2, E2/L2, F1/L2, F2/L2, F3/L2, F4/L1, G1/L2, G2/L2, G3/L2 and G4/L2.

The material in E1/L2 and C4L-6 were reworked following a failed moisture content.

Work was undertaken to fill the depressions within cells to the level C3/L-7, C4/L-7 and D4/L-7 recorded as minus (-) layers.

The location of the back of the bund was set out on site and the depression within cell B5/C5 was noted beneath the bunds location. See photos

The material within the depressions C3, C4 & D4 was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Work within the trenches within C3 and D4 were filled in accordance with the CQA plan where the area was less than 125m^2 testing was not required.

The material within the layer G2 and G4 was tied in within 300mm bench and tapered into the CQA cells. See photos

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

A 15T dumper plus two 10T were used on site. An additional stockpile was added in cell D2 from 03 July 2018.

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3.3a Additional Layers
Layers to -7 were installed within cells C3, C4, D2, and D4
Trenches within cells C3 and D4 were filled

3.3b Levelling the Area
No work undertaken

3.3 Layer 1
E2, F2, F3, F4, G2, G3, G4

3.4 Layer 2
E1, E2, F1, F2, F3, F4, G1, G2, G3, G4

3.5 Layer 3
No work undertaken

3.6 Layer 4
No work undertaken

3.7 Layer 5
No work undertaken

3.8 Layer 6
B2, C2, D2

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

25 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
25 results plus 0 spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

Two cell E1L2 & C4L-6 were retested and determined suitable.

4.2 Permeability Samples

One sample and one spare were taken at F3/L1 on 4 July 2018 and F4/L2 on 5 July 2018.
no results have been received.

4.3 MC and PI,

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None received in this period.

4.4 Particle Distribution and Particle Density

None received in this period.

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 130Kn/m^2, with a minimum reading was 58KN/ m^2 recorded.

5.0 Results Summary

All test results were passed except two rework and retested sites which then passed Permeability result are awaiting testing.

6.0 Problems Encountered

None

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L7				-L7		L1		L2A		L2				L3		L4				L5		L6		L7		
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest			Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig
A1																																							
Date																																							
A2																																							
Date																																							
A3																																							
Date																																							
B1																																							
Date																																							
B2																			MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC And S	P Sh-max			MC&PI/ **D&S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120	MC&PI/ D&MC And S	Sh-100			
Date																			T-19/06/18	P 20/06/18			T-20/06/18	P 22/06/18			22/06/18	P 25/06/18	26/06/18	F 27/06/18	27/06/18	P-28/06/18	28/06/18	P 29/06/18	T 02/07/18	P 03/07/18			
B3																																							
Date																																							
C1																			MC&PI **/D&S/** D&MC	P Sh-125	MC&PI**/** D&MC and S	P Sh-120	MC&PI/ **D&S/** D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/D &MC And S	Sh-106			MC& PI/D &MC	P Sh-max					
Date																			T-20/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18			26/06/18	P 27/06/18	26/06/18	P 29/06/18			T-29/06/18	P 03/07/18					
C2	N/A	N/A (D2-1)																	MC&PI **/D&S/** D&MC **/P**	P Sh-max			MC&PI/**D &S**/D&MC And S	P Sh-max			MC&PI/ **D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/ **D&DS/** D&MC And S	Sh-106	MC&PI/ **DS&D/** D&MC And S	Sh-80			
Date	18/06/18																		T-19/06/18	P-20/06/18			21/06/18	22/06/18			25/06/18	P 26/06/18	26/06/18	P-28/06/18			28/06/18	P 29/06/18	T 02/07/18	P 03/07/18			
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)																							
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P-28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07 /18	F-Moistu re 05/07 /18	05/07/18	P 06/07/18	06/07/18	P 09/07/18																							
C4	MC&PI/ **D&S**/D& MC	P-Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/ **D&S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&M C And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94																							
Date	20/06/18		22/06/18	F 25/06/18	25/06/18	P 26/06/18	26/06/18	P-28/06/18	26/06/18	P 01/07/18	02/07/18	P 04/07/18	04/07 /18	F-Moistu re 05/07 /18	05/07/18	P 06/07/18	06/07/18	P 09/07/18																							
C5																																							
Date																																							
D1																			MC&PI/ D&MC	Sh-max	N/A	P (C1L2A)	MC&PI/ D&MC And S	P Sh-max			MC&PI/ **D&S**/D& MC And S	P Sh-max	MC&PI/**D &DS** / D&MC And S	Sh-112			MC& PI/**D &S/**D &MC	P Sh-max					
Date																			T-19/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18			25/06/18	P 26/06/18	27/06/18	P 29/06/18			T-29/06/18	P-01/07/18					
D2	N/A	N/A (C2L-1)																	MC&PI **/D&S/** D&MC	P Sh-120			MC&PI/**D &S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D &DS/** D&MC And S	P Sh-122			MC&PI/ **D&DS/** D&MC And S	Sh-108	MC&PI/ **DS&D/** D&MC And S	Sh-90			

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Date	18/06/18																		T-19/06/18	P-20/06/18			21/06/18	22/06/18			25/06/18	P 26/06/18	27/06/18	P-28/06/18			28/06/18	P 29/06/18	T 02/07/18	P 03/07/18					
D3																																										
Date																																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)																									
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P-28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F-Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18																									
D5																																										
Date																																										
E1																			MC&PI/D&MC	P Sh-max			MC&PI/D&MC	P Sh-130max		P Sh-58min															
Date																			T-29/06/18	P-01/07/18			T-03/07/18	F-Moisture 05/07/18		P 09/07/18															
E2																			MC&PI/D&MC	P Sh-130 max			MC&PI/D&MC																		
Date																			T-03/07/18	P 05/07/18			T-06/07/18	Need Core																	
E3																																										
Date																																										
F1																			MC&PI/**D&S**/D&MC	P Sh-max			MC&PI/**D&S**/D&MC	P Sh-124																	
Date																			T-29/06/18	P-01/07/18			T-03/07/18	P 05/07/18																	
F2																			MC&PI/**D&S**/D&MC	P Sh-			MC&PI/D&MC	P Sh-72																	
Date																			T-03/07/18	P-04/07/18			T-05/07/18	P 09/07/18																	
F3																			MC&PI/**D&S**/D&MC	P Sh-130 max			MC&PI/**DS&D**/D&MC	P Sh-98																	
Date																			T-04/07/18	P 05/07/18			T-05/07/18	P 09/07/18																	
F4																			MC&PI/D&MC	P Sh-130 Max			MC&PI/DS&D/D&MC	P Sh-130 Max																	
Date																			T-04/07/18	P 05/07/18			T-06/07/18	P 09/07/18																	
G1																			MC&PI/D&MC	P Sh-max			MC&PI/D&MC	P Sh-94min																	
Date																			T-29/06/18	P-01/07/18			T-03/07/18	P 05/07/18																	
G2																			MC&PI/D&MC	Sh-			MC&PI/D&MC	P Sh-124																	
Date																			T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18																	
G3																			MC&PI/D&MC	Sh-			MC&PI/D&MC	P Sh-114																	
Date																			T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18																	
G4																			MC&PI/**D&DS**/D&MC	Sh-			MC&PI/D&MC	P Sh-120																	
Date																			T-03/07/18	P 04/07/18			T-05/07/18	P 05/07/18																	

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P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Cell Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18		
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**596**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**02/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L5-C1	Core 2 B2-L6-C1	Core 3 C2-L6-C1	Core 4 D2-L6-C1	
Bulk Density	2.09	2.03	2.06	2.06	
Moisture Content	19	23	21	23	
Dry Density	1.76	1.65	1.71	1.68	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	3.0	2.0	2.3	0.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 03/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**604**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**03/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-5 WW 04/07/18

Location Reference	Core 1 C4-L5-C1	Core 2 G2-L1-C1	Core 3 G3-L1-C1	Core 4 G4-L1-C1	Core 5 F2-L1-C1
Bulk Density	2.06	2.07	2.06	2.07	2.06
Moisture Content	22	21	22	22	21
Dry Density	1.68	1.72	1.69	1.70	1.70

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	0.8	1.8	1.8	0.4	2.7

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 04/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**607**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**04/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L1-C1	Core 2 E2-L1-C1	Core 3 E1-L2-C1	Core 4 F1-L2-C1	Core 5 G1-L2-C1
Bulk Density	2.08	2.09	2.11	2.01	2.08
Moisture Content	20	20	18	23	20
Dry Density	1.74	1.74	1.78	1.63	1.73

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.1	1.3	2.5	2.3	2.1

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 05/07/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**608**		

Site Reference:	**Core 6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**04/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

C4L-6 WW 05/07/18

Location Reference	Core 6 C4-L6-C1				
Bulk Density	2.06				
Moisture Content	18				
Dry Density	1.75				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	4.5				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 05/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**617**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**05/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-6 WW 05/07/18

Location Reference	Core 1 G2-L2-C1	Core 2 G3-L2-C1	Core 3 F4-L1-C1	Core 4 G4-L2-C1	Core 5 C4-L6-C1
Bulk Density	2.03	2.04	2.03	2.01	2.04
Moisture Content	23	22	20	23	21
Dry Density	1.66	1.67	1.69	1.63	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.0	1.8	4.3	2.5	2.9

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 06/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**618**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**06/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-7 WW 09/07/18

Location Reference	Core 1 F2-L2-C1	Core 2 F3-L2-C1	Core 3 F4-L2-C1	Core 4 E1-L2-C1	Core 5 C4-L7-C1
Bulk Density	2.03	2.03	2.05	2.00	2.06
Moisture Content	25	24	22	23	23
Dry Density	1.63	1.63	1.68	1.62	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	0.2	0.6	2.2	2.8	0.6

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 07/07/2018	Fig

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Appendix 3 – Field Logs

Available on request

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
CITY COUNCIL
CYNGOR DINAS
Casnewydd

Appendix 4 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
679	C1-L5 02.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
680	C1-L5 02.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
681	C1-L5 02.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
682	B2-L6 02.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	100	
683	B2-L6 02.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
684	B2-L6 02.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
685	C2-L6 02.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	80	
686	C2-L6 02.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
687	C2-L6 02.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
688	D2-L6 02.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	128	
689	D2-L6 02.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
690	D2-L6 02.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	90	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
691	C4-L5 03.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
692	C4-L5 03.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
693	C4-L5 03.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
694	G4-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	128	
695	G4-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
696	G4-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
697	G3-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
698	G3-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
699	G3-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
700	G2-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
701	G2-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
702	G2-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
703	F2-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
704	F2-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
705	F2-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	

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		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
706	E1-L2 04.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
707	E1-L2 04.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
708	E1-L2 04.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
709	F1-L2 04.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
710	F1-L2 04.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
711	F1-L2 04.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
712	G1-L2 04.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
713	G1-L2 04.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
714	G1-L2 04.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	94	
715	E2-L1 04.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
716	E2-L1 04.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
717	E2-L1 04.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
718	F3-L1 04.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
719	F3-L1 04.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
720	F3-L1 04.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
721	C4-L6 04.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
722	C4-L6 04.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
723	C4-L6 04.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
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		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
724	G2-L2 05.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
725	G2-L2 05.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
726	G2-L2 05.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
727	G3-L2 05.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
728	G3-L2 05.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	114	
729	G3-L2 05.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
730	F4-L1 05.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
731	F4-L1 05.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
732	F4-L1 05.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
733	G4-L2 05.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
734	G4-L2 05.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
735	G4-L2 05.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
736	C4-L6 05.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
737	C4-L6 05.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
738	C4-L6 05.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	Reworked

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		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
739	E1-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	58	
740	E1-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
741	E1-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	126	
742	F2-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	110	
743	F2-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	128	
744	F2-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	72	
745	F3-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	98	
746	F3-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	105	
747	F3-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
748	F4-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
749	F4-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
750	F4-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
751	C4-L7 06.07.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	105	
752	C4-L7 06.07.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	105	
753	C4-L7 06.07.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	94	

cjassociates
King Road Avenue, Bristol, BS11 9HF
Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 08/07/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
619	D2-L3 25.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
620	D2-L3 25.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
621	D2-L3 25.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
622	C2-L3 25.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
623	C2-L3 25.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
624	C2-L3 25.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
625	C4-L2 25.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
626	C4-L2 25.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	100	
627	C4-L2 25.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
628	D1-L3 25.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
629	D1-L3 25.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
630	D1-L3 25.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
631	B2-L4 26.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
632	B2-L4 26.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
633	B2-L4 26.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
634	C1-L3 26.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
635	C1-L3 26.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
636	C1-L3 26.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	08/07/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
637	D2-L4 27.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	122	
638	D2-L4 27.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
639	D2-L4 27.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
640	B2-L4 27.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
641	B2-L4 27.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
642	B2-L4 27.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
643	C4-L3 27.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
644	C4-L3 27.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
645	C4-L3 27.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
646	C2-L4 27.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
647	C2-L4 27.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
648	C2-L4 27.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	122	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
649	B2-L5 28.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	128	
650	B2-L5 28.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	120	
651	B2-L5 28.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
652	C2-L5 28.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
653	C2-L5 28.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
654	C2-L5 28.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
655	C1-L4 28.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	106	
656	C1-L4 28.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
657	C1-L4 28.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
658	D1-L4 28.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	124	
659	D1-L4 28.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
660	D1-L4 28.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
661	D2-L5 28.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
662	D2-L5 28.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	128	
663	D2-L5 28.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
664	C4-L4 29.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	120	
665	C4-L4 29.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
666	C4-L4 29.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
667	G1-L1 29.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	128	
668	G1-L1 29.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
669	G1-L1 29.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
670	F1-L1 29.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
671	F1-L1 29.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
672	F1-L1 29.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
673	E1-L1 29.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
674	E1-L1 29.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
675	E1-L1 29.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
676	D1-L5 29.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
677	D1-L5 29.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
678	D1-L5 29.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 08/07/2018

Fig.

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Appendix 5 – PI, PL, MC, LL Results

None received this period

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Appendix 6 – Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Tuesday 02 July 2018 tie in to bund at G1 to G4



Site Extents 04 July 2018 temporary fill in B1 and D1 for haul road Trenches in C3 and D4 shown

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
06 July 2018 rework cell E1L2	**06 July 2018 additional stockpile at D2L6**
	
06 July 2018 Cell C5 Pin at 1m off the back of the bund. Showing depression	**06 July 2018 Depression in Cell C3**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
06 July 2018 Trenches in Cells C3 and D4 filled	**06 July 2018 Trenches in Cells C3 and D4 filled**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 04 WE 15/07/18

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 15-07-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		15-07-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Appendix

1. Progression Plan
2. Test Results
3. Field Logs
4. Hand Shear Vane Logs
5. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
6. Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Hot, dry weather on Monday to Wednesday. Thursday and Friday intermittent drizzle with rain.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile was slightly dry with some clods and larger pieces requiring the addition of water and breaking up.

Up to the 11 July 2018, 15,057 tonnes of material was delivered to site although some tickets are missing and the tonnage may increase slightly.

There has been a reduction in the quantity of material delivered to the site this week and the working hours were returned to finish at 1600 from Wednesday 11 July 2018.

3.2 Work Progress

Work was undertaken to the level E1L3, E3L2, E4L2, E5L2, F1L3, F2L3, F5L1, G1L3, G2L3, G3L3, G4L3, G5L2,

Work was undertaken to fill the depressions within cells to the level C3/L-8, C4/L-8. Also layers D4L-9, D4L-9A, D4L-10, D4L-10A and D4/L-11 were installed.

The location of the back of the bund was reset out for a 10m bund. The height of material above existing material for gird at C5 bottom left was set out with 1.8m on material required. The level at grid E5 bottom left was set out for a 1/50 fall and 120mm of existing material was removed. See photos

The material within the depressions C3, C4 & D4 was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

The material within the layer G2 and G4 was tied in within 300mm bench and tapered into the CQA cells. See photos

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

A 15T dumper plus two 10T were used on site.

3.3a Additional Layers

Layers to -8 were installed within cells C3, C4 and D4. Plus up to layer D4L-11

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3.3b Levelling the Area
No work undertaken
3.3 Layer 1
E3, E4, E5, F5, G5
3.4 Layer 2
E3, E4, E5, G5
3.5 Layer 3
E1, F1, F2, F3, G1, G2, G3, G4
3.6 Layer 4
No work undertaken
3.7 Layer 5
No work undertaken
3.8 Layer 6
No work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

18 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
18 results plus 0 spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No cells were retested and determined suitable.

4.2 Permeability Samples

One sample and one spare were taken at D4L-9 on 10 July 2018 and E5/L2 on 12 July 2018.
no results have been received.

4.3 MC and PI,

None received in this period.

4.4 Particle Distribution and Particle Density

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None received in this period.

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 130Kn/m^2, with a minimum reading was 70KN/ m^2 recorded.

5.0 Results Summary

All test results were passed except two rework and retested sites which then passed Permeability result are awaiting testing.

6.0 Problems Encountered

None

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L7				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1																										
Date																										
B2																										
Date																										
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18		22/06/18	F 25/06/18	25/06/18	P 26/06/18	26/06/18	P- 28/06/18	26/06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C5																										
Date																										
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18	11/07/18	P 12/07/18	12/07/18	P 16/07/18
D5																										
Date																										

Grid Ref	L1		L2A		L2				L3		L4				L5		L6	
	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result
A1																		
Date																		
A2																		
Date																		
A3																		
Date																		

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B1																		
Date																		
B2	MC&PI/D &MC	P Sh-max			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120	MC&PI/ D&MC And S	Sh-100
Date	T- 19/06/18	P 20/06/18			T-20/06/18	P 22/06/18			22/06/18	P 25/06/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18	28/06/18	P 29/06/18	T 02/07/18	P 03/07/18
B3																		
Date																		
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120	MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max		
Date	T- 20/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18			26/06/18	P 27/06/18	26/06/18	P 29/06/18			T- 29/06/18	P 03/07/18		
C2	MC&PI/ **D&S**/D &MC/**P**	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D& DS**/ D&MC And S	Sh-106	MC&PI/ **DS&D**/ D&MC And S	Sh-80
Date	T- 19/06/18	P- 20/06/18			21/06/18	22/06/18			25/06/18	P 26/06/18	26/06/18	P- 28/06/18			28/06/18	P 29/06/18	T 02/07/18	P 03/07/18
C3																		
Date																		
C4																		
Date																		
C5																		
Date																		
D1	MC&PI/D &MC	Sh-max	N/A	P (C1L2A)	MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ /D&MC And S	P Sh-max	MC&PI/**D& DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max		
Date	T- 19/06/18		21/06/18	22/06/18	22/06/18	P 25/06/18			25/06/18	P 26/06/18	27/06/18	P 29/06/18			T- 29/06/18	P- 01/07/18		
D2	MC&PI/ **D&S**/D &MC	P Sh-120			MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D& DS**/ D&MC And S	P Sh-122			MC&PI/**D& DS**/ D&MC And S	Sh-108	MC&PI/ **DS&D**/ D&MC And S	Sh-90
Date	T- 19/06/18	P- 20/06/18			21/06/18	22/06/18			25/06/18	P 26/06/18	27/06/18	P- 28/06/18			28/06/18	P 29/06/18	T 02/07/18	P 03/07/18
D3																		
Date																		
D4																		
Date																		
D5																		
Date																		
E1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	Sh-94								
Date	T- 29/06/18	P- 01/07/18			T- 03/07/18	F- Moisture 05/07/18		P 09/07/18	T- 10/07/18	P 12/07/18								
E2	MC&PI/ D&MC	P Sh-130 max			MC&PI/ D&MC	P S-130 Max												
Date	T- 03/07/18	P 05/07/18			T- 06/07/18	P 10/07/18												
E3	MC&PI/ D&MC	P S68			MC&PI/ DS&D/D &MC	P S-130 max												
Date	T- 09/07/18	P 11/07/18			T- 11/07/18	P- 13/07/18												
E4	MC&PI/ D&MC	P S104			MC&PI/ DS&D/D &MC	P S-74												
Date	T- 09/07/18	P 11/07/18			T- 12/07/18	P- 13/07/18												
E5	MC&PI/ D&MC	P S108			MC&PI/ DS&D/D &MC	P S-110												
Date	T- 09/07/18	P 11/07/18			T- 12/07/18	P- 13/07/18												
F1	MC&PI/ **D&S**/D &MC	P Sh-max			MC&PI/ **D&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98								
Date	T- 29/06/18	P- 01/07/18			T- 03/07/18	P 05/07/18			T- 10/07/18	P 11/07/18								
F2	MC&PI/ **D&S**/D &MC	P Sh-			MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	Sh-								
Date	T- 03/07/18	P- 04/07/18			T- 05/07/18	P 09/07/18			T- 13/07/18	Need Core								
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max			MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	Sh-								

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Date	T-04/07/18	P 05/07/18			T-05/07/18	P 09/07/18			T-13/07/18	Need Core								
F4	MC&PI/D&MC	P Sh-130 Max			MC&PI/DS&D/D&MC	P Sh-130 Max												
Date	T-04/07/18	P 05/07/18			T-06/07/18	P 09/07/18												
F5	MC&PI/D&MC	P Sh-130																
Date	T-09/07/18	P 10/07/18																
G1	MC&PI/D&MC	P Sh-max			MC&PI/D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3								
Date	T-29/06/18	P- 01/07/18			T-03/07/18	P 05/07/18			10/07/18	P 11/07/18								
G2	MC&PI/D&MC	Sh-			MC&PI/D&MC	P Sh-124			MC&PI/D&MC	P Sh-105								
Date	T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18			T-10/07/18	P 12/07/18								
G3	MC&PI/D&MC	Sh-			MC&PI/D&MC	P Sh-114			MC&PI/DS&D/D&MC	P Sh-130 max								
Date	T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18			T-11/07/18	P 12/07/18								
G4	MC&PI/**D&DS**/D&MC	Sh-			MC&PI/D&MC	P Sh-120			MC&PI/D&MC	P Sh-80								
Date	T-03/07/18	P 04/07/18			T-05/07/18	P 05/07/18			T-12/07/18	P 16/07/18								
G5	MC&PI/**D&DS**/D&MC	P Sh-95			MC&PI/D&MC	P Sh-72												
Date	T-09/07/18	P 10/07/18			T-13/07/18	P 16/07/18												

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Cell Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18		
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		
D4L-9		10/07/18		
E5-L2		12/07/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**761**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**09/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

C4L-8 WW 10/07/18

Location Reference	Core 1 E2-L2-C1	Core 2 G5-L1-C1	Core 3 F5-L1-C1	Core 4 C4-L8-C1	
Bulk Density	2.06	2.02	2.03	2.03	
Moisture Content	21	24	24	23	
Dry Density	1.71	1.63	1.64	1.66	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.3	1.6	1.2	1.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 10/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**775**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**10/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

D4L-9 includes additional layer
F1L3 includes G1L3

Location Reference	Core 1 E3-L1-C1	Core 2 E4-L1-C1	Core 3 E5-L1-C1	Core 4 D4-L9-C1	Core 5 F1-L3-C1
Bulk Density	2.04	2.07	2.07	2.06	2.05
Moisture Content	24	22	21	23	22
Dry Density	1.64	1.70	1.71	1.68	1.69

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	0.6	1.3	1.4	0.6	1.8

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 11/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**807**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**11/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E1-L3-C1	Core 2 G2-L3-C1	Core 3 G3-L3-C1	Core 4 D4-L-10-C1	
Bulk Density	2.08	2.06	2.05	2.03	
Moisture Content	22	22	20	24	
Dry Density	1.71	1.69	1.70	1.64	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	0.7	1.0	3.3	0.8	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee, Materials and Field Testing Director	Date 12/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**825**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**12/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E3-L2-C1	Core 2 E4-L2-C1	Core 3 E5-L2-C1		
Bulk Density	2.02	2.05	2.09		
Moisture Content	25	23	21		
Dry Density	1.62	1.67	1.72		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	0.5	0.9	0.1		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 13/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**858**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**13/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D4-L-11-C1	Core 2 G5-L2-C1	Core 3 G4-L3-C1		
Bulk Density	2.06	2.04	2.02		
Moisture Content	22	24	26		
Dry Density	1.70	1.65	1.61		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.5	0.4	0.4		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 14/07/2018	Fig

Streetscene
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Appendix 3 – Field Logs

Available on request

Streetscene
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Appendix 4 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
762	E2-L2 09.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
763	E2-L2 09.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
764	E2-L2 09.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
765	G5-L1 09.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	95	
766	G5-L1 09.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
767	G5-L1 09.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
768	F5-L1 09.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
769	F5-L1 09.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
770	F5-L1 09.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
771	C4-L8 09.07.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	105	
772	C4-L8 09.07.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	88	
773	C4-L8 09.07.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	86	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	10/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
776	E3-L1 10.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
777	E3-L1 10.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	68	
778	E3-L1 10.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	100	
779	E4-L1 10.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	104	
780	E4-L1 10.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
781	E4-L1 10.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
782	E5-L1 10.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
783	E5-L1 10.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	108	
784	E5-L1 10.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
785	D4-L9 10.07.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	94	
786	D4-L9 10.07.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	110	
787	D4-L9 10.07.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	102	
788	F1-L3 10.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
789	F1-L3 10.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	98	
790	F1-L3 10.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	11/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
808	E1-L3 11.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	94	
809	E1-L3 11.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	
810	E1-L3 11.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	112	
811	G2-L3 11.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	105	
812	G2-L3 11.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	125	
813	G2-L3 11.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
814	G3-L3 11.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
815	G3-L3 11.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
816	G3-L3 11.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
817	D4-L-10 11.07.18 HSV1	Layer -10	Grey slightly sandy slightly gravelly CLAY	70	
818	D4-L-10 11.07.18 HSV2	Layer -10	Grey slightly sandy slightly gravelly CLAY	82	
819	D4-L-10 11.07.18 HSV3	Layer -10	Grey slightly sandy slightly gravelly CLAY	110	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	12/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
826	E3-L2 12.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
827	E3-L2 12.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
828	E3-L2 12.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
829	E4-L2 12.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	74	
830	E4-L2 12.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
831	E4-L2 12.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
832	E5-L2 12.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
833	E5-L2 12.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
834	E5-L2 12.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	110	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	13/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
859	D4-L-11 13.07.18 HSV1	Layer -11	Grey slightly sandy slightly gravelly CLAY	120	
860	D4-L-11 13.07.18 HSV2	Layer -11	Grey slightly sandy slightly gravelly CLAY	130+	
861	D4-L-11 13.07.18 HSV3	Layer -11	Grey slightly sandy slightly gravelly CLAY	130+	
862	G5-L2 13.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	80	
863	G5-L2 13.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	72	
864	G5-L2 13.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	90	
865	G4-L3 13.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	85	
866	G4-L3 13.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
867	G4-L3 13.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	80	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	14/07/2018	
		R Anstee, Materials and Field Testing Director		

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
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Appendix 5 – PI, PL, MC, LL Results

None received this period

Streetscene
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South Wales/De Cymru
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Appendix 6 – Photographs

Streetscene
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South Wales/De Cymru
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Monday 09 July 2018



Monday 9 July 2018 Grid E4 Bund front Red and 2m off back of 10m bund in blue



Monday 9 July 2018 Grid E4 Bund front Red and 2m off back of 10m bund in blue

Streetscene
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Newport/Casnewydd
South Wales/De Cymru
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Thursday 12 July 2018 grid D5 high spot removed and surveyed Friday 13 July 2018	**Thursday 12 July 2018 grid D5 completion of Ditch fill**
	
Wednesday 11 July Grid D2 low stockpile volume	**Friday 13 July Site wide Stockpile filled Friday increased loads**

Streetscene
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Friday 13 July 18 Grid C3 High spot removed and surveyed	**Friday 13 July 18 Grid D3 250mm high spot to be removed next week**
	
Friday 13 July 18 Grid D3 250mm high spot to be removed next week	

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 05 WE 22/07/18

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 22-07-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		22-07-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved
1	26-09-18	Section 5, 6 and Appendix 1 Permeability updated	William Watt		

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

1. Progression Plan
2. Test Results- Permeability Tests
3. Moisture content/dry density for Compaction
4. Field Logs
5. Hand Shear Vane Logs
6. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
7. Photographs

Streetscene
Y-Strydynun

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CYNGOR DINAS
Casnewydd

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Warm, dry weather all week.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile with some clods and larger pieces requiring the addition breaking up.

Up to the 18 July 2018, 18,986 tonnes of material was delivered to site.

The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B3L1, B4L1, B5L1, C3L1, C4L1, C5L1, D3L1, D4L1, D5L1, E2L3, E3L3, E4L3, E5L3, F4L3, F5L2, G1L4, G2L4, G3L4, G4L4, G5L3

17 July 2018 work was undertaken to level area D3 and B3 the Dozer, 1 excavator, 15-ton truck and 10-ton dumper were used from 7:30am to 13:30pm 6hrs to see photos.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

A 15 ton truck, one 10 ton, 2 excavators, dozer, and bowser were on site all week. Additional 10 ton front loader on site from 18 July 2018.

3.3a Additional Layers
C5L1A, C5L2A, C5L3A, C5L4A

3.3b Levelling the Area
Area B3, D3 were levelled and surface vegetation was removed from B4, C4 and C5.

3.3 Layer 1
B3, B4, B5, C3, C4, C5, D3, D4, D5

3.4 Layer 2
F5

3.5 Layer 3

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E2, E3, E4, E5, F4, G5

3.6 Layer 4

G1, G2, G3, G4

3.7 Layer 5

No work undertaken

3.8 Layer 6

No work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

20 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
20 results plus 1 spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

Grid D4/L1 spare core was tested and reworked ant retest determined acceptable.

4.2 Permeability Samples

One sample and one spare were taken at E3L3 on 18 July 2018 and D3/L1 on 20 July 2018.
two results have been received.

4.3 MC and PI,

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.4 Particle Distribution and Particle Density

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

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NP20 4UR

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 130Kn/m^2, with a minimum reading was 55KN/ m^2 recorded.

5.0 Results Summary

All test results were passed except one rework and retested sites which then passed
Permeability results received were miss named as recorded within the Appendix 1 Progress Plan

6.0 Problems Encountered

Permeability test results for C2L1 were miss named by the lab. The correct details are shown in the Progress Plan.

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Appendix 1 - Progression Plan

Streetscene
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South Wales/De Cymru
NP20 4UR

Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L7				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1																										
Date																										
B2																										
Date																										
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18	11/07/18	P 12/07/18	12/07/18	P 16/07/18
D5																										
Date																										

Grid Ref	L1		L2A		L2				L3		L4				L5		L6	
	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result
A1																		
Date																		

Streetscene
Y-Strydynun

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A2																		
Date																		
A3																		
Date																		
B1																		
Date																		
B2	MC&PI/D&MC	P Sh-max			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120	MC&PI/ D&MC And S	Sh-100
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18			T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18
B3	MC&PI/DS*&D/D&MC	P Sh-70																
Date	T- 19/06/18	P 20/07/18																
B4	MC&PI/D&MC	P Sh-86																
Date	T- 19/06/18	P 20/07/18																
B5	MC&PI/ D&MC	N/A B4L1																
Date	T- 19/06/18	N/A B4L1																
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120	MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max		
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18		
C2	MC&PI/ **D&S**/D &MC/**P**	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D&DS**/ D&MC And S	Sh-106	MC&PI/ **DS&D**/ D&MC And S	Sh-80
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18
C3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 128																
Date	T- 19/06/18	P 23/07/18																
C4	MC&PI/DS&D/D&MC	Sh- 115																
Date	T- 18/07/18	P 20/07/18																
C5	MC&PI/D&MC	Sh-108																
Date	T- 18/07/18	P 20/07/18																
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)	MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max		
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P- 01/07/18		
D2	MC&PI/ **D&S**/D &MC	P Sh-120			MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/**D&DS**/ D&MC And S	Sh-108	MC&PI/ **DS&D**/ D&MC And S	Sh-90
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58																
Date	T- 20/06/18	P 23/07/18																
D4	MC&PI/	P		P														

Streetscene
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NP20 4UR

	D&MC	Sh-120		sh- 95														
Date	T-16/07/18	F- moisture & Voids	P 19/07/18	P 20/07/18														
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1														
Date	T-16/07/18	F	19/07/18	20/07/18														
E1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	Sh-94								
Date	T-29/06/18	P- 01/07/18			T-03/07/18	F- Moisture 05/07/18		P 09/07/18	T-10/07/18	P 12/07/18								
E2	MC&PI/ D&MC	P Sh-130 max			MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112								
Date	T-03/07/18	P 05/07/18			T-06/07/18	P 10/07/18			T-17/07/18	P 19/07/18								
E3	MC&PI/ D&MC	P S68			MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150								
Date	T-09/07/18	P 11/07/18			T-11/07/18	P-13/07/18			T-18/07/18	P 19/07/18								
E4	MC&PI/ D&MC	P S104			MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130								
Date	T-09/07/18	P 11/07/18			T-12/07/18	P-13/07/18			T-18/07/18	P 19/07/18								
E5	MC&PI/ D&MC	P S108			MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	Sh-98								
Date	T-09/07/18	P 11/07/18			T-12/07/18	P-13/07/18			T-18/07/18	P 19/07/18								
F1	MC&PI/ **D&S**/D &MC	P Sh-max			MC&PI/ **D&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98								
Date	T-29/06/18	P- 01/07/18			T-03/07/18	P 05/07/18			T-10/07/18	P 11/07/18								
F2	MC&PI/ **D&S**/D &MC	P Sh-			MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100								
Date	T-03/07/18	P- 04/07/18			T-05/07/18	P 09/07/18			T-13/07/18	P 17/07/18								
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max			MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92								
Date	T-04/07/18	P 05/07/18			T-05/07/18	P 09/07/18			T-13/07/18	P 17/07/18								
F4	MC&PI/ D&MC	P Sh-130 Max			MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55								
Date	T-04/07/18	P 05/07/18			T-06/07/18	P 09/07/18			T-16/07/18	P 17/07/18								
F5	MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/D &MC	Sh- 150 max												
Date	T-09/07/18	P 10/07/18			T-16/07/18	P 18/07/18												
G1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)						
Date	T-29/06/18	P- 01/07/18			T-03/07/18	P 05/07/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)						
G2	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100						
Date	T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18			T-10/07/18	P 12/07/18	T-20/07/18	P 23/07/18						
G3	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68						
Date	T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18			T-11/07/18	P 12/07/18	T-20/07/18	P 23/07/18						
G4	MC&PI/ **D&DS**/D &MC	Sh-			MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ D&MC	Sh-						
Date	T-03/07/18	P 04/07/18			T-05/07/18	P 05/07/18			T-12/07/18	P 16/07/18	T-20/07/18	Need Core						
G5	MC&PI/ **D&DS**/D &MC	P Sh-95			MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	Sh-								
Date	T-09/07/18	P 10/07/18			T-13/07/18	P 16/07/18			T-20/07/18	Need Core								

P- Pass
F- Fail

Streetscene
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MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit	
D&S -	Particle Density & Particle Distribution 1/500m3		(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record	
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)	
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)	

Permeability

Cell Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1	$1.4x10^{-10}$m/s $9.6x10^{-11}$m/s	19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		
D4L-9		10/07/18		
E5-L2		12/07/18		
E3-L3		18/07/18		
D3-L1		20/07/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	B2L1
Sample Ref.:	GT13
Sample Type:	U

Description:
Very stiff dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	30 mm from top
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.80	101.64
Height	*mm*	100.62	100.46
Moisture Content	*%*	20	23
Bulk Density	*Mg/m³*	2.03	2.09
Dry Density	*Mg/m³*	1.69	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.16	1.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	3.8

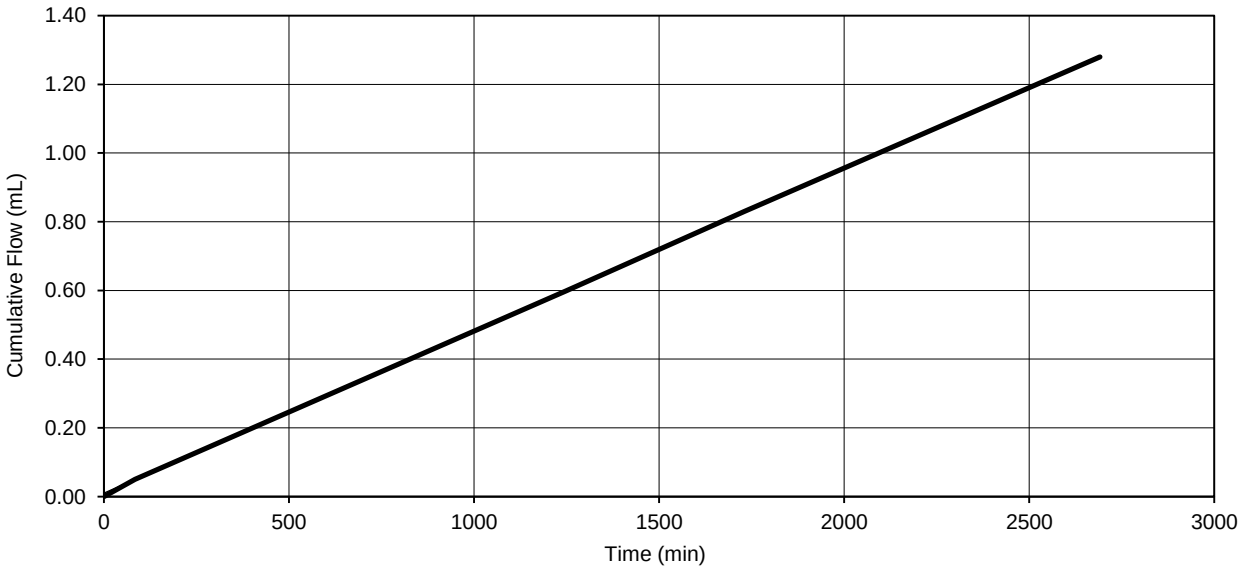
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 9.6×10^{-11} m/s



Checked and Approved by

C F Wallace - Technical Manager
20/07/2018

Project Number:

GEO / 27648

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	C1L1 (core cutter) GT11
Sample Ref.:	GT11
Sample Type:	U

Description:
Stiff dark grey CLAY with rare fine to medium gravel.

SPECIMEN DETAILS

Depth within original sample	20 mm from top
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.44	101.23
Height	*mm*	100.09	99.87
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.01	2.07
Dry Density	*Mg/m³*	1.64	1.65

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.00	1.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	5.2

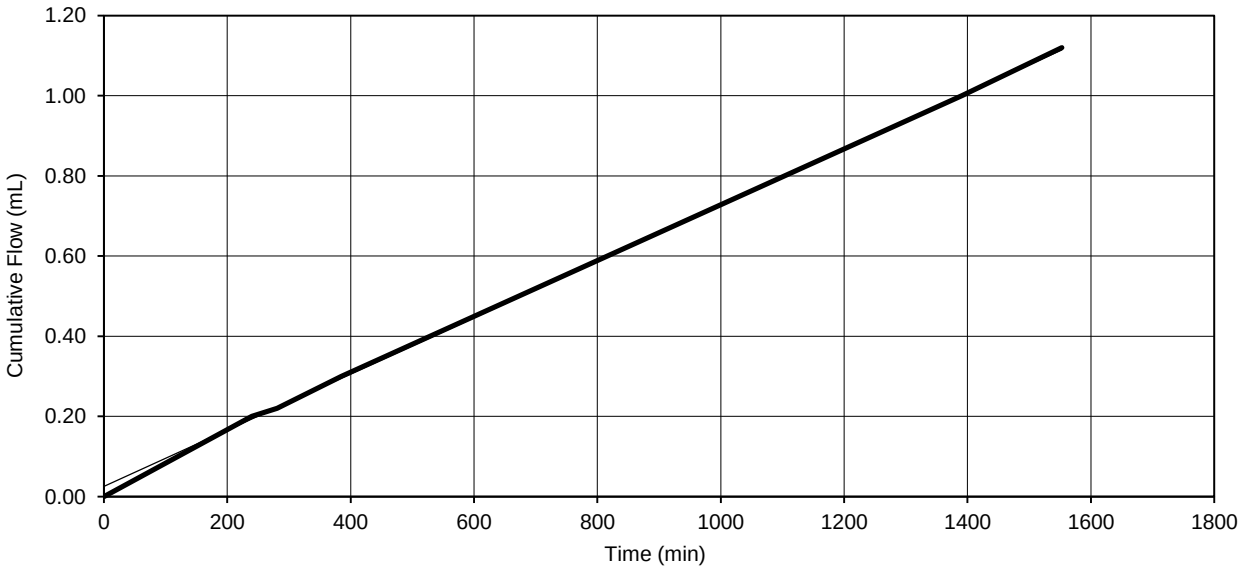
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.4×10^{-10} m/s



Checked and Approved by

C F Wallace - Technical Manager
20/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Streetscene
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Casnewydd

Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**880**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**16/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F4-L3-C1	Core 2 F3-L3-C1	Core 3 F2-L3-C1		
Bulk Density	2.06	2.06	2.06		
Moisture Content	21	23	20		
Dry Density	1.70	1.68	1.71		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.8	0.6	2.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 17/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**892**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D4-L1-C1	Core 2 F5-L2-C1			
Bulk Density	2.05	2.07			
Moisture Content	17	20			
Dry Density	1.75	1.72			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	5.8	2.4			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 18/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**899**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D4-L1-C2				
Bulk Density	2.07				
Moisture Content	19				
Dry Density	1.73				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	3.1				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 19/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**900**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**18/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E2-L3-C1	Core 2 E3-L3-C1	Core 3 E4-L3-C1	Core 4 E5-L3-C1	
Bulk Density	2.04	2.02	2.06	2.05	
Moisture Content	22	22	22	21	
Dry Density	1.68	1.66	1.69	1.69	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.9	3.0	1.5	2.1	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 19/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**915**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C5-L1A-C1	Core 2 C5-L1-C1	Core 3 C4-L1-C1	Core 4 B4-L1-C1	Core 5 B3-L1-C1
Bulk Density	2.04	2.05	2.06	2.02	2.04
Moisture Content	22	23	23	25	24
Dry Density	1.68	1.67	1.67	1.62	1.65

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.1	1.3	0.7	0.7	0.3

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 20/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**916**		

Site Reference:	**Core 6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 6 D4-L1-C1				
Bulk Density	2.06				
Moisture Content	22				
Dry Density	1.69				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	1.2				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 20/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**941**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L1-C1	Core 2 D3-L1-C1	Core 3 C5-L4A-C1	Core 4 G2-L4-C1	Core 5 G3-L4-C1
Bulk Density	2.06	2.05	1.99	2.05	2.01
Moisture Content	21	22	26	23	23
Dry Density	1.70	1.69	1.58	1.67	1.63

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.6	1.7	1.5	1.2	2.9

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/07/2018	Fig

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
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South Wales/De Cymru
NP20 4UR

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CYNGOR DINAS Casnewydd

Appendix 4 – Field Logs

Available on request

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
881	F4-L3 16.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	55	
882	F4-L3 16.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
883	F4-L3 16.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	118	
884	F3-L3 16.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	92	
885	F3-L3 16.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	110	
886	F3-L3 16.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
887	F2-L3 16.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
888	F2-L3 16.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
889	F2-L3 16.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	17/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
893	D4-L1 17.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
894	D4-L1 17.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
895	D4-L1 17.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
896	F5-L2 17.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
897	F5-L2 17.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
898	F5-L2 17.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver R. Anstee	Date 18/07/2018	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
901	E2-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130	
902	E2-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	125	
903	E2-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	112	
904	E3-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
905	E3-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
906	E3-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
907	E4-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	140	
908	E4-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130	
909	E4-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
910	E5-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	98	
911	E5-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
912	E5-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	19/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
917	C5-L1A 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	90	
918	C5-L1A 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	95	
919	C5-L1A 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	84	
920	C5-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
921	C5-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	108	
922	C5-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
923	C4-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	118	
924	C4-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
925	C4-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	115	
926	B4-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
927	B4-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	86	
928	B4-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	118	
929	B3-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	74	
930	B3-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	70	
931	B3-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	108	
932	D4-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	135	
933	D4-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	95	
934	D4-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	20/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
942	C3-L1 20.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
943	C3-L1 20.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
944	C3-L1 20.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	128	
945	D3-L1 20.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	58	
946	D3-L1 20.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
947	D3-L1 20.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	104	
948	C5-L4A 20.07.18 HSV1	Layer 4A	Grey slightly sandy slightly gravelly CLAY	58	
949	C5-L4A 20.07.18 HSV2	Layer 4A	Grey slightly sandy slightly gravelly CLAY	74	
950	C5-L4A 20.07.18 HSV3	Layer 4A	Grey slightly sandy slightly gravelly CLAY	102	
951	G2-L4 20.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
952	G2-L4 20.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
953	G2-L4 20.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
954	G3-L4 20.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
955	G3-L4 20.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	68	
956	G3-L4 20.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	

Streetscene
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Appendix 6 – PI, PL, MC, LL Results

None received this period

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Casnewydd

Appendix 7 – Photographs

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Monday 16 July 2018



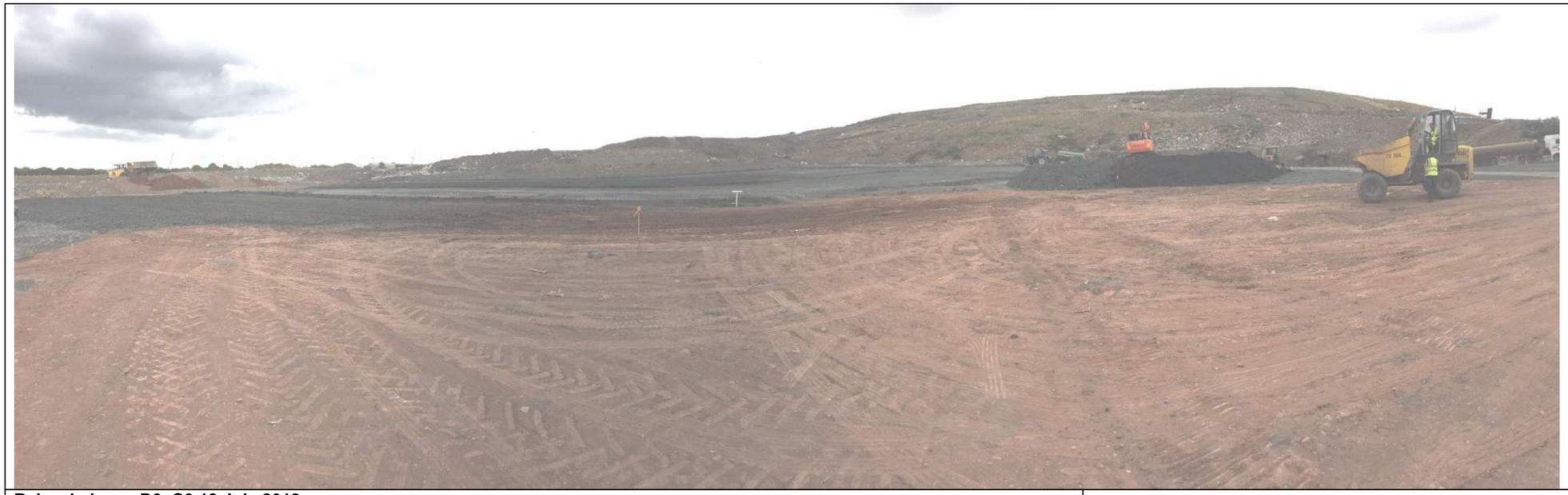
Monday 16 July 2018 Material



Tuesday 17 July 2018 Area D3 re-graded

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Releveled area D3, C3 18 July 2018



17 July 2018 Regrade B3 Area



19 July 2018 grid C5L2A fill depression

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19 July 2018 Re-work Grid D4/D5	

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Environmental Services

Title: Docksway Waste Disposal
Site Cell 4 Containment

Construction Quality Assurance
Report No 06 WE 29/07/18

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Project Ref: 2506
Date: 29-07-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		29-07-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
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5.2 Permeability

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4. Moisture content/dry density for Compaction
5. Field Logs
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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

The weather was generally warm, sunny, dry weather with a light shower Tuesday.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile with some clods and larger pieces requiring the addition breaking up.

Up to the 25 July 2018, 22,547.2 tonnes of material was delivered to site.

The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level F1L4, F2L4, F3L4, F4L4, F5L3

Work was undertaken to level area B1 from 23 July 2018 to 27 July 2018. Plant used 1 excavator, 30T volvo dumper truck from 7:30am to 1600. Material was installed in the ditch in accordance with the CQA plan with every second layer tested. The existing clay liner was reinstated see photo.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

A 15 ton truck, two 10 ton front loader, 1D9 Dumper, 3 excavators, dozer, roller and bowser were on site all week. D9 Dumper broken 11am to 3pm Monday 23 July 2018. One 10t front loader not used Monday 23 July 18.

3.3a Additional Layers

Layers B1L-1, to B1L-4 were installed to fill low spots.
A break within the existing clay bund was repaired in Grid B1 (see photos) the volume of material was recorded as 3m deep, 7m long and 2m high =14m^3

3.3b Levelling the Area

Area B1.

3.3 Layer 1

No work undertaken

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3.4 Layer 2
No work undertaken
3.5 Layer 3
No work undertaken
3.6 Layer 4
F1, F2, F3, F4, F5, G5, E1, E2, E3, E4, E5
3.7 Layer 5
E1, E2, F1, F2, F3, F4, G1, G2, G3, G4
3.8 Layer 6
No work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

22 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
22 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at E2L4 on 24 July 2018 and F2L5 on 26 July 2018.
no results have been received this week.

4.3 MC and PI,

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.4 Particle Distribution and Particle Density

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

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4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 150Kn/m^2, with a minimum reading was 65KN/ m^2 recorded.

5.0 Results Summary

All test results were passed except one grid F3L4 was reworked and retested, which then passed.

6.0 Problems Encountered

None

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L7				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	N/A B1L-1	N/A B1L-4			MC&PI/D &MC	Sh-																		
Date	27/06/18	P 30/07/18					27/06/18	Need Core																		
B2																										
Date																										
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D& MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18	11/07/18	P 12/07/18	12/07/18	P 16/07/18
D5																										
Date																										

Grid Ref	L1		L2A		L2				L3		L4				L5		L6	
	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result
A1																		
Date																		
A2																		

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Date																		
A3																		
Date																		
B1																		
Date																		
B2	MC&PI/D&MC	P Sh-max			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120	MC&PI/ D&MC And S	Sh-100
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18			T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18
B3	MC&PI/DS*&D/D&MC	P Sh-70																
Date	T- 19/06/18	P 20/07/18																
B4	MC&PI/D&MC	P Sh-86																
Date	T- 19/06/18	P 20/07/18																
B5	MC&PI/ D&MC	N/A B4L1																
Date	T- 19/06/18	N/A B4L1																
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120	MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh-106			MC&PI/ D&MC	P Sh-max		
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18		
C2	MC&PI/ **D&S**/D &MC/**P**	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D&DS**/ D&MC And S	Sh-106	MC&PI/ **DS&D**/ D&MC And S	Sh-80
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18
C3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 128																
Date	T- 19/06/18	P 23/07/18																
C4	MC&PI/DS&D/D&MC	Sh- 115																
Date	T- 18/07/18	P 20/07/18																
C5	MC&PI/D&MC	Sh-108																
Date	T- 18/07/18	P 20/07/18																
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)	MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max		
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18		
D2	MC&PI/ **D&S**/D &MC	P Sh-120			MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/**D&DS**/ D&MC And S	Sh-108	MC&PI/ **DS&D**/ D&MC And S	Sh-90
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58																
Date	T- 20/06/18	P 23/07/18																
D4	MC&PI/ D&MC	P Sh-120		P sh- 95														

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Date	T-16/07/18	F- moisture & Voids	P 19/07/18	P 20/07/18														
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1														
Date	T-16/07/18	F	19/07/18	20/07/18														
E1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	Sh-		
Date	T-29/06/18	P- 01/07/18			T-03/07/18	F- Moisture 05/07/18		P 09/07/18	T-10/07/18	P 12/07/18	T-24/07/18	P 25/07/18			T-27/07/18	Need Core		
E2	MC&PI/ D&MC	P Sh-130 max			MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	Sh-		
Date	T-03/07/18	P 05/07/18			T-06/07/18	P 10/07/18			T-17/07/18	P 19/07/18	T-24/07/18	P 25/07/18			T-27/07/18	Need Core		
E3	MC&PI/ D&MC	P S68			MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135						
Date	T-09/07/18	P 11/07/18			T-11/07/18	P-13/07/18			T-18/07/18	P 19/07/18	T-24/07/18	P 26/07/18						
E4	MC&PI/ D&MC	P S104			MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102						
Date	T-09/07/18	P 11/07/18			T-12/07/18	P-13/07/18			T-18/07/18	P 19/07/18	T-24/07/18	P 26/07/18						
E5	MC&PI/ D&MC	P S108			MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118						
Date	T-09/07/18	P 11/07/18			T-12/07/18	P-13/07/18			T-18/07/18	P 19/07/18	T-25/07/18	P 26/07/18						
F1	MC&PI/ **D&S**/D &MC	P Sh-max			MC&PI/ **D&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142		
Date	T-29/06/18	P- 01/07/18			T-03/07/18	P 05/07/18			T-10/07/18	P 11/07/18	N/A F2/L4	N/A F2/L4			T-26/07/18	P 27/07/18		
F2	MC&PI/ **D&S**/D &MC	P Sh-			MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130		
Date	T-03/07/18	P- 04/07/18			T-05/07/18	P 09/07/18			T-13/07/18	P 17/07/18	T-20/07/18	P 24/07/18			T-26/07/18	P 27/07/18		
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max			MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118		
Date	T-04/07/18	P 05/07/18			T-05/07/18	P 09/07/18			T-13/07/18	P 17/07/18	T-20/07/18	F Moisture>26 24/07/18	P 25/07/18		T-26/07/18	P 30/07/18		
F4	MC&PI/ D&MC	P Sh-130 Max			MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67		
Date	T-04/07/18	P 05/07/18			T-06/07/18	P 09/07/18			T-16/07/18	P 17/07/18	T-24/07/18	P 25/07/18			T-27/07/18	P 30/07/18		
F5	MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65						
Date	T-09/07/18	P 10/07/18			T-16/07/18	P 18/07/18			T-24/07/18	P 25/07/18	T-27/07/18	P 30/07/18						
G1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI/ D&MC	N/A G2L5		
Date	T-29/06/18	P- 01/07/18			T-03/07/18	P 05/07/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T-25/07/18	N/A G2L5		
G2	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122		
Date	T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18			T-10/07/18	P 12/07/18	T-20/07/18	P 23/07/18			T-25/07/18	P 27/07/18		
G3	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114		
Date	T-02/07/18	P 04/07/18			T-04/07/18	P 05/07/18			T-11/07/18	P 12/07/18	T-20/07/18	P 23/07/18			T-25/07/18	P 27/07/18		
G4	MC&PI/ **D&DS**/D &MC	Sh-			MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ D&MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98		
Date	T-03/07/18	P 04/07/18			T-05/07/18	P 05/07/18			T-12/07/18	P 16/07/18	T-20/07/18	P 24/07/18			T-25/07/18	P 27/07/18		
G5	MC&PI/ **D&DS**/D &MC	P Sh-95			MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98						
Date	T-09/07/18	P 10/07/18			T-13/07/18	P 16/07/18			T-20/07/18	P 24/07/18	T-26/07/18	P 27/07/18						

P- Pass
F- Fail

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Grid Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		
D4L-9		10/07/18		
E5-L2		12/07/18		
E3-L3		18/07/18		
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		

Bund

Layer	Ref	Date	Pass/Fail

Streetscene
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Appendix 2 - Test Results - Permeability Tests

Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**963**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**23/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 G4-L4-C1	Core 2 G5-L3-C1	Core 3 F2-L4-C1	Core 4 F3-L4-C1	
Bulk Density	2.08	2.08	1.99	1.97	
Moisture Content	20	21	25	27	
Dry Density	1.73	1.72	1.59	1.56	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.5	1.1	2.3	1.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 24/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**989**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**24/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L4-C1	Core 2 F4-L4-C1	Core 3 F5-L3-C1	Core 4 E1-L4-C1	Core 5 E2-L4-C1
Bulk Density	2.06	2.04	2.07	2.02	2.03
Moisture Content	22	24	22	23	21
Dry Density	1.68	1.65	1.70	1.65	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.1	0.6	1.1	2.4	3.5

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 25/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1009**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**25/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E3-L4-C1	Core 2 E4-L4-C1	Core 3 E5-L4-C1		
Bulk Density	2.05	2.09	2.04		
Moisture Content	21	22	23		
Dry Density	1.69	1.71	1.66		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	2.3	0.2	1.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 26/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1029**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**26/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 G2-L5-C1	Core 2 G3-L5-C1	Core 3 G4-L5-C1	Core 4 G5-L4-C1	Core 5 F1-L5-C1
Bulk Density	2.08	2.05	2.02	2.05	2.05
Moisture Content	21	22	23	22	22
Dry Density	1.73	1.67	1.65	1.69	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.4	1.5	2.3	1.6	1.6

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 27/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1030**		

Site Reference:	**Core 6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**26/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 6 F2-L5-C1				
Bulk Density	2.08				
Moisture Content	22				
Dry Density	1.71				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	0.5				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 27/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1054**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**27/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L5-C1	Core 2 F4-L5-C1	Core 3 F5-L4-C1	Core 4 B1-L-1-C1	
Bulk Density	2.06	2.06	2.03	2.05	
Moisture Content	21	21	21	23	
Dry Density	1.70	1.71	1.67	1.67	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.9	1.9	3.1	1.2	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 28/07/2018	Fig

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Appendix 4 – Field Logs

Available on request

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
CITY COUNCIL
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Casnewydd

Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
964	G4-L4 23.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
965	G4-L4 23.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
966	G4-L4 23.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
967	G5-L3 23.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
968	G5-L3 23.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	78	
969	G5-L3 23.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
970	F2-L4 23.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	88	
971	F2-L4 23.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	80	
972	F2-L4 23.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
973	F3-L4 23.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
974	F3-L4 23.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	106	
975	F3-L4 23.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	138	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
990	F3-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
991	F3-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	115	
992	F3-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
993	F4-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	128	
994	F4-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	128	
995	F4-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	70	
996	F5-L3 24.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
997	F5-L3 24.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	142	
998	F5-L3 24.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
999	E1-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1000	E1-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
1001	E1-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	98	
1002	E2-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	142	
1003	E2-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	134	
1004	E2-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	141	

cjassociates
King Road Avenue, Bristol, BS11 9HF
Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 25/07/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1010	E3-L4 25.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1011	E3-L4 25.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1012	E3-L4 25.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	135	
1013	E4-L4 25.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	102	
1014	E4-L4 25.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	108	
1015	E4-L4 25.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	125	
1016	E5-L4 25.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	118	
1017	E5-L4 25.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1018	E5-L4 25.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	26/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1031	G2-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	132	
1032	G2-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
1033	G2-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	140	
1034	G3-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	114	
1035	G3-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	115	
1036	G3-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1037	G4-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	120	
1038	G4-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1039	G4-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	98	
1040	G5-L4 26.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	108	
1041	G5-L4 26.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	122	
1042	G5-L4 26.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	98	
1043	F1-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	142	
1044	F1-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1045	F1-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1046	F2-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130	
1047	F2-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1048	F2-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver



R Anstee, Materials and Field Testing Director

Date 27/07/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1055	F3-L5 27.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1056	F3-L5 27.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1057	F3-L5 27.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
1058	F4-L5 27.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	67	
1059	F4-L5 27.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	88	
1060	F4-L5 27.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	119	
1061	F5-L4 27.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1062	F5-L4 27.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
1063	F5-L4 27.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	65	
1064	B1-L-1 27.07.18 HSV1	Layer -1	Grey slightly sandy slightly gravelly CLAY	104	
1065	B1-L-1 27.07.18 HSV2	Layer -1	Grey slightly sandy slightly gravelly CLAY	150+	
1066	B1-L-1 27.07.18 HSV3	Layer -1	Grey slightly sandy slightly gravelly CLAY	130	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	28/07/2018	
		R Anstee, Materials and Field Testing Director		

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Appendix 6 – PI, PL, MC, LL Results

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
C2 L4	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	20	27		
D1 L4	4	0.00		B	Dark grey slightly sandy silty CLAY			20.6	100	48	20	28		
D2 L4	1	0.00		B	Dark grey slightly sandy silty CLAY			20.5	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D2-L4			B	Dark grey silty CLAY	2.69	2
GT5		D1-L4			B	Dark grey silty CLAY.	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

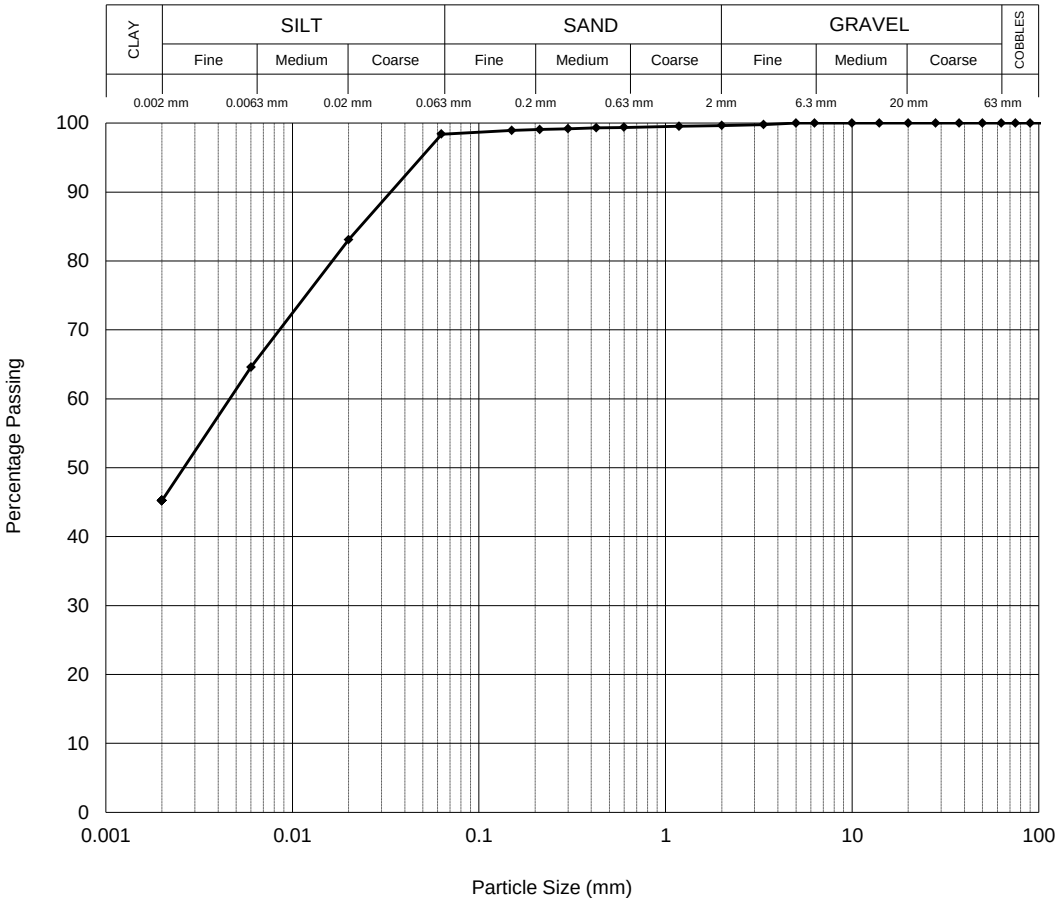
BH / TP No.	GT2
Sample Ref	D2-L4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	65
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	53
Clay	46

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

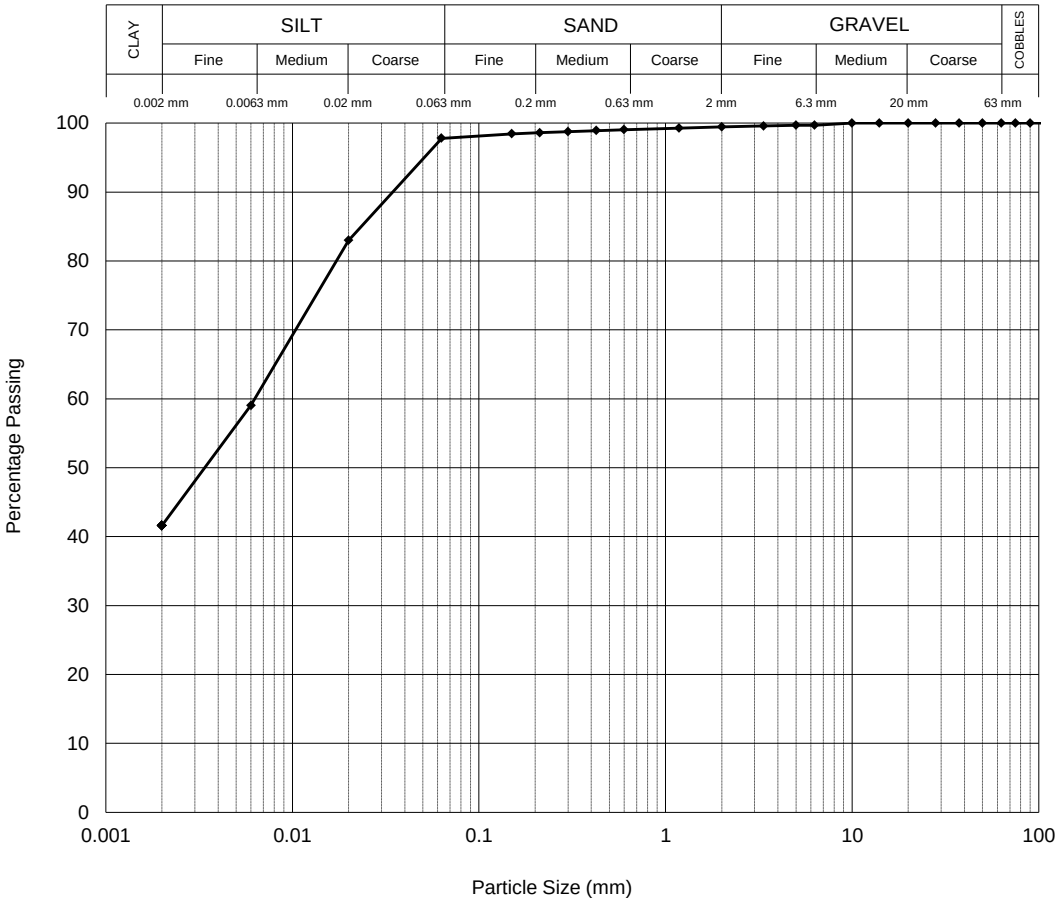
BH / TP No.	GT5
Sample Ref	D1-L4
Sample Type	B

Description

Dark grey silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	59
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
CITY COUNCIL
CYNGOR DINAS
Casnewydd

Appendix 7 – Photographs

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Tuesdays 24 July 2018 Material to sump



Monday 23 July 2018 Material F1L4



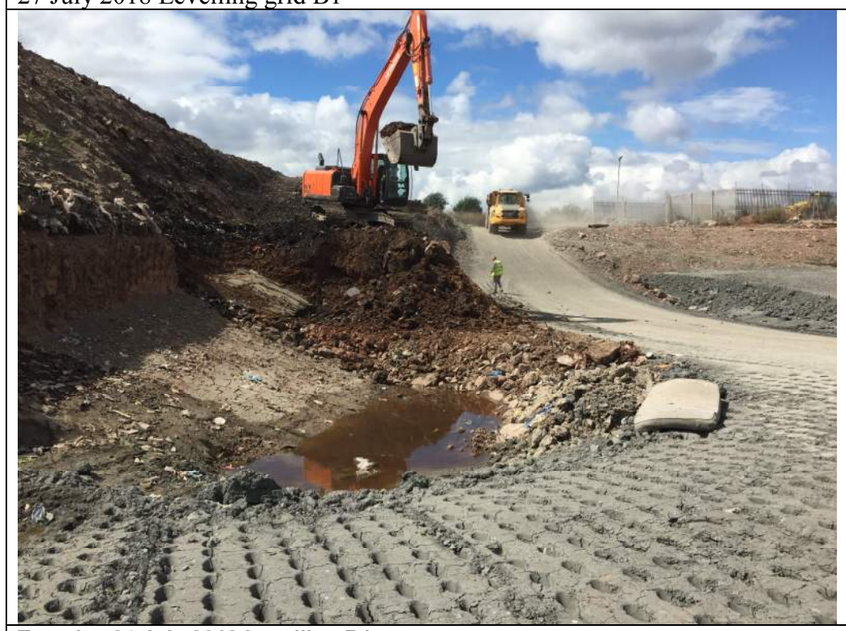
Monday 23 July 2018 Levelling B1

Streetscene
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Newport/Casnewydd
South Wales/De Cymru
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27 July 2018 Levelling grid B1



Tuesday 24 July 2018 Levelling B1



Friday 27 July 2018 existing bund reinstatement grid B1

Streetscene
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Friday 27 July 2018 existing bund repair B1 14m^3	

Streetscene
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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 07 WE 05/08/18

Streetscene
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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 05-08-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		05-08-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

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South Wales/De Cymru
NP20 4UR

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3.2 Work – progress
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4.2 Permeability Samples
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5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

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3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

Streetscene
Y-Strydynun

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South Wales/De Cymru
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Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

The weather Monday rain and standing water from heavy rain on weekend. The rest of the week was fine although standing water delayed progress to Wednesday 12pm.

3.0 Progress for the week

3.1 Stockpile

Limited material to stockpile Monday due to wet weather, Material arriving at the stockpile with intermittent clods and larger pieces requiring the addition breaking up.

Up to the 01 August 2018, 26,518 tonnes of material was delivered to site.

The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B2L7, B3L2, B4L2, B5L2, C3L2, C4L2, C5L2, E3L5, E4L5, E5L5,

Work in depressions within cell B1 to level B1l-6 and BIL-5A

Monday 30 July 2018 to Wednesday Am, work was undertaken to remediate the surrounding area to enable access to the site. The site was too wet to access to lay clay with clay installed in depressions within B1.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

A 15-ton truck, two 10-ton front loader, 2 excavators, dozer, roller and bowser were on site. Wednesday, Thursday and Friday the 15 ton truck was off site and the 5-ton front loader was used in addition to two 10-Ton front loaders.

3.3a Additional Layers

No work undertaken

3.3b Levelling the Area

B1L-6 and BIL-5A

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South Wales/De Cymru
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3.3 Layer 1
No work undertaken
3.4 Layer 2
B3, B4, B5, C3, C4, C5
3.5 Layer 3
No work undertaken
3.6 Layer 4
No work undertaken
3.7 Layer 5
E3, E4, E5, G5L5,
3.8 Layer +6
B2L7, G4L6, G3L6, G2L6

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

15 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
15 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at E3L5 on 01 August 2018.
no results have been received this week.

4.3 MC and PI,

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.4 Particle Distribution and Particle Density

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Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 150Kn/m^2, with a minimum reading was 60KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

None

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Appendix 1 - Progression Plan

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI/D &MC	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D& MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18	27/07/18				27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D& MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18	11/07/18	P 12/07/18	12/07/18	P 16/07/18
D5																										
Date																										

Grid Ref	L1		L2A		L2				L3		L4				L5		L6		L7	
	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result
A1																				

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NP20 4UR

Date																				
A2																				
Date																				
A3																				
Date																				
B1																				
Date																				
B2	MC&PI/D&MC	P Sh-max			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S** / D&MC And S	P Sh-max	MC&PI/**D&S** / D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120	MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18			T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18	T 02/08/18	P03/08 /18
B3	MC&PI/DS*&D/D&MC	P Sh-70			MC&PI/DS&D/D&MC	P Sh-105														
Date	T- 19/06/18	P 20/07/18			T- 02/08/18	P 03/08/18														
B4	MC&PI/D&MC	P Sh-86			D&MC	P S-100														
Date	T- 19/06/18	P 20/07/18			T-02/08/18	P 03/08/18														
B5	MC&PI/ D&MC	N/A B4L1			N/A B3L2	N/A B3L2														
Date	T- 19/06/18	N/A B4L1			N/A B3L2	N/A B3L2														
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120	MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max				
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18				
C2	MC&PI/ **D&S**/D &MC/**P**	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D& DS/** D&MC And S	Sh-106	MC&PI/ **DS&D/** D&MC And S	Sh-80		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18		
C3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 128			MC&PI/ **D&S**/D &MC/**P**	P Sh- 80														
Date	T- 19/06/18	P 23/07/18			T- 02/08/18	P 06/08/18														
C4	MC&PI/DS&D/D&MC	Sh- 115			MC&PI/DS&D/D&MC	P Sh- 124														
Date	T- 18/07/18	P 20/07/18			T- 02/08/18	P 03/08/18														
C5	MC&PI/D&MC	Sh-108			N/A C4L2	N/A C4L2														
Date	T- 18/07/18	P 20/07/18			N/A C4L2	N/A C4L2														
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)	MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/**D& DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max				
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18				
D2	MC&PI/ **D&S**/D &MC	P Sh-120			MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D& DS/** D&MC And S	P Sh-122			MC&PI/**D& DS/** D&MC And S	Sh-108	MC&PI/ **DS&D/** D&MC And S	Sh-90		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18		
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58																		
Date	T-	P																		

Streetscene
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Newport City Council
Cyngor Dinas Casnewydd

	20/06/18	23/07/18																		
D4	MC&PI/ D&MC	P Sh-120		P sh- 95																
Date	T- 16/07/18	F- moisture & Voids	P 19/07/18	P 20/07/18																
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1																
Date	T- 16/07/18	F	19/07/18	20/07/18																
E1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5				
Date	T- 29/06/18	P- 01/07/18			T- 03/07/18	F- Moisture 05/07/18		P 09/07/18	T- 10/07/18	P 12/07/18	T- 24/07/18	P 25/07/18			T- 27/07/18	P 02/08/18				
E2	MC&PI/ D&MC	P Sh-130 max			MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88				
Date	T- 03/07/18	P 05/07/18			T- 06/07/18	P 10/07/18			T- 17/07/18	P 19/07/18	T- 24/07/18	P 25/07/18			T- 27/07/18	P 02/08/18				
E3	MC&PI/ D&MC	P S68			MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75				
Date	T- 09/07/18	P 11/07/18			T- 11/07/18	P- 13/07/18			T- 18/07/18	P 19/07/18	T- 24/07/18	P 26/07/18			T- 01/08/18	P 02/08/18				
E4	MC&PI/ D&MC	P S104			MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95				
Date	T- 09/07/18	P 11/07/18			T- 12/07/18	P- 13/07/18			T- 18/07/18	P 19/07/18	T- 24/07/18	P 26/07/18			T- 01/08/18	P 02/08/18				
E5	MC&PI/ D&MC	P S108			MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92				
Date	T- 09/07/18	P 11/07/18			T- 12/07/18	P- 13/07/18			T- 18/07/18	P 19/07/18	T- 25/07/18	P 26/07/18			T- 01/08/18	P 02/08/18				
F1	MC&PI/ **D&S**/D &MC	P Sh-max			MC&PI/ **D&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142				
Date	T- 29/06/18	P- 01/07/18			T- 03/07/18	P 05/07/18			T- 10/07/18	P 11/07/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18				
F2	MC&PI/ **D&S**/D &MC	P Sh-			MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130				
Date	T- 03/07/18	P- 04/07/18			T- 05/07/18	P 09/07/18			T- 13/07/18	P 17/07/18	T- 20/07/18	P 24/07/18			T- 26/07/18	P 27/07/18				
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max			MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118				
Date	T- 04/07/18	P 05/07/18			T- 05/07/18	P 09/07/18			T- 13/07/18	P 17/07/18	T- 20/07/18	F Moisture>26 24/07/18	P 25/07/18		T- 26/07/18	P 30/07/18				
F4	MC&PI/ D&MC	P Sh-130 Max			MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67				
Date	T- 04/07/18	P 05/07/18			T- 06/07/18	P 09/07/18			T- 16/07/18	P 17/07/18	T- 24/07/18	P 25/07/18			T- 27/07/18	P 30/07/18				
F5	MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65								
Date	T- 09/07/18	P 10/07/18			T- 16/07/18	P 18/07/18			T- 24/07/18	P 25/07/18	T- 27/07/18	P 30/07/18								
G1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI/ D&MC	N/A G2L5				
Date	T- 29/06/18	P- 01/07/18			T- 03/07/18	P 05/07/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	N/A G2L5				
G2	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122	MC&PI/ /D&MC			
Date	T- 02/07/18	P 04/07/18			T- 04/07/18	P 05/07/18			T- 10/07/18	P 12/07/18	T- 20/07/18	P 23/07/18			T- 25/07/18	P 27/07/18	T- 03/08/18	Need Core		
G3	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114	MC&PI/ D&MC			
Date	T- 02/07/18	P 04/07/18			T- 04/07/18	P 05/07/18			T- 11/07/18	P 12/07/18	T- 20/07/18	P 23/07/18			T- 25/07/18	P 27/07/18	T- 03/08/18	Need Core		
G4	MC&PI/ **D&DS**/D &MC	Sh-			MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ D&MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98	MC&PI/ DS&D/D &MC	P Sh-110		
Date	T- 03/07/18	P 04/07/18			T- 05/07/18	P 05/07/18			T- 12/07/18	P 16/07/18	T- 20/07/18	P 24/07/18			T- 25/07/18	P 27/07/18	T- 03/08/18	P 06/08/18		
G5	MC&PI/ **D&DS**/D &MC	P Sh-95			MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102				
Date	T- 09/07/18	P 10/07/18			T- 13/07/18	P 16/07/18			T- 20/07/18	P 24/07/18	T- 26/07/18	P 27/07/18			T- 03/08/18	P 06/08/18				

Streetscene
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P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit	
D&S -	Particle Density & Particle Distribution 1/500m3		(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record	
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)	
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)	

Permeability

Grid Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		
D4L-9		10/07/18		
E5-L2		12/07/18		
E3-L3		18/07/18		
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		
E3-L5		01/08/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability Tests

Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1078**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**31/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L-5-C1	Core 2 B1-L-2A-C1			
Bulk Density	2.03	2.02			
Moisture Content	22	24			
Dry Density	1.66	1.63			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.3	2.1			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 01/08/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1095**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**01/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E2-L5-C1	Core 2 E3-L5-C1	Core 3 E4-L5-C1	Core 4 B1-L-6-C1	Core 5 E5-L5-C1
Bulk Density	2.04	2.02	2.07	2.03	2.05
Moisture Content	22	23	22	24	22
Dry Density	1.67	1.64	1.70	1.63	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.7	2.7	0.9	0.9	1.6

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 02/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1123**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**02/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B4-L2-C1	Core 2 B3-L2-C1	Core 3 B2-L7-C1	Core 4 C4-L2-C1	Core 5 B1-L-5A-C1
Bulk Density	2.03	2.08	2.01	2.07	2.06
Moisture Content	22	21	22	21	22
Dry Density	1.67	1.72	1.65	1.71	1.69

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.6	1.1	3.6	1.2	0.9

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 03/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1159**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**03/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L2-C1	Core 2 G5-L5-C1	Core 3 G4-L6-C1		
Bulk Density	2.02	2.03	2.05		
Moisture Content	23	23	23		
Dry Density	1.65	1.65	1.67		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	2.5	2.1	0.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 04/08/2018	Fig

Streetscene
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Appendix 4 – Field Logs

Available on request

Streetscene
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Newport/Casnewydd
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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1079	B1-L-5 31.07.18 HSV1	Layer -5	Grey slightly sandy slightly gravelly CLAY	125	
1080	B1-L-5 31.07.18 HSV2	Layer -5	Grey slightly sandy slightly gravelly CLAY	125	
1081	B1-L-5 31.07.18 HSV3	Layer -5	Grey slightly sandy slightly gravelly CLAY	105	
1082	B1-L-2A 31.07.18 HSV1	Layer -2A	Grey slightly sandy slightly gravelly CLAY	115	
1083	B1-L-2A 31.07.18 HSV2	Layer -2A	Grey slightly sandy slightly gravelly CLAY	115	
1084	B1-L-2A 31.07.18 HSV3	Layer -2A	Grey slightly sandy slightly gravelly CLAY	108	

QA Ref.	cjassociates	Approver	Date	Fig.
	King Road Avenue, Bristol, BS11 9HF	R. Anstee	01/08/2018	
Rev 1.0	Tel 0117 9821473	R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1096	E2-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	88	
1097	E2-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1098	E2-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130	
1099	E3-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	75	
1100	E3-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	125	
1101	E3-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1102	E4-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
1103	E4-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1104	E4-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	95	
1105	B1-L-6 01.08.18 HSV1	Layer -6	Grey slightly sandy slightly gravelly CLAY	150+	
1106	B1-L-6 01.08.18 HSV2	Layer -6	Grey slightly sandy slightly gravelly CLAY	60	
1107	B1-L-6 01.08.18 HSV3	Layer -6	Grey slightly sandy slightly gravelly CLAY	135	
1108	E5-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	135	
1109	E5-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	92	
1110	E5-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	92	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	02/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1124	B2-L7 02.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	100	
1125	B2-L7 02.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	110	
1126	B2-L7 02.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	96	
1127	B3-L2 02.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
1128	B3-L2 02.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1129	B3-L2 02.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	105	
1130	B4-L2 02.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	100	
1131	B4-L2 02.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1132	B4-L2 02.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1133	C4-L2 02.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1134	C4-L2 02.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
1135	C4-L2 02.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1136	B1-L-5A 02.08.18 HSV1	Layer -5A	Grey slightly sandy slightly gravelly CLAY	135	
1137	B1-L-5A 02.08.18 HSV2	Layer -5A	Grey slightly sandy slightly gravelly CLAY	120	
1138	B1-L-5A 02.08.18 HSV3	Layer -5A	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	04/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1160	C3-L2 03.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	108	
1161	C3-L2 03.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
1162	C3-L2 03.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	80	
1163	G5-L5 03.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1164	G5-L5 03.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1165	G5-L5 03.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	132	
1166	G4-L6 03.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	102	
1167	G4-L6 03.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	140	
1168	G4-L6 03.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	04/08/2018	
		R Anstee, Materials and Field Testing Director		

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Appendix 6 – PI, PL, MC, LL Results

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Appendix 7 – Photographs

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Monday 30 July 2018 Site standing water at sump, Cell B1 and stockpile. Work cleaning site.



Tuesday 31 July 2018 Standing water at sump. Work on Cell B1

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Tuesday 31 July 2018 work on filling depression Cell B1-2A	**Friday 03 August 2018 Following level Survey Checking profile to finished level**
	
Friday 03 August Work bringing row G to row E to final level	

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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 08 WE 12/08/18

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Project Ref: 2506
Date: 12-08-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		12-08-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

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4. Moisture content/dry density for Compaction
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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

The weather Monday to Thursday sunny and dry, Friday light rain in Am.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile with intermittent clods and larger pieces requiring the addition breaking up. Reduction in material delivery resolved.

Up to the 08 August 2018, 29,447 tonnes of material was delivered to site.

The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level E1L6, E2L6, E3L6, E4L6, E5L6, F1L6, F2L6, F3L6, F4L6, F5L6, G1L6,

Setting out for the spine drain, cross drains and location of the sump (330901.219, 185014.071 at 4.4AOD) were marked on site and agreed as per the drawing

Setting out for the Bund toe was agreed as 46m from the spine drain for a 7m wide bund.

Setting out for the piezometer within Grid G2 was agreed at location 7.8m G2 to G3 and 9.3m G2 to H2.

The Levels and locations of the grid were agreed with the levels for rows F and G agreed for the installation of the tyre bales.

Proposed clay material finished levels for in grids D1 to B5 set out on site. See photo, level at C1 is at top of brown fill material level for 1/50 fall across grid to allow for a >1/100 fall to sump.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

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A 15-ton truck, two 10-ton front loader, 2 excavators, dozer, roller and bowser were on site. One 10 ton front loader not used Monday 06 August 2018.
Some delay was experienced 10 August 2018 as rain prevented material installation on site.

3.3a Additional Layers
No work undertaken
3.3b Levelling the Area
No work undertaken
3.3 Layer 1
No work undertaken
3.4 Layer 2
No work undertaken
3.5 Layer 3
No work undertaken
3.6 Layer 4
No work undertaken
3.7 Layer 5
No work undertaken
3.8 Layer +6
E1L6, E2L6, E3L6, E4L6, E5L6, F1L6, F2L6, F3L6, F4L6, F5L6 G1L6,

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

11 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
11 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at G2L6 on 06 August 2018.
no results have been received this week.

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4.3 MC and PI,

Some details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1. Some of the moisture contents were outside tolerance as highlighted within Appendix 1. It is noted that the other samples taken on the day of failed moisture contents were within tolerance and the core sample moisture contents for the sample locations were within tolerance.

4.4 Particle Distribution and Particle Density

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 150Kn/m^2, with a minimum reading was 78KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

See Photos, concern of leachate flow from the tip from B1 to D1. Council confirms that the pumping of leachate from the manhole adjacent to grid A1 suggests that the leachate level in the manhole is within tolerance and therefore the leachate is perched. The contractor will continue to undertake leachate management.

See Photos, Concern of stability for the tip B1 to D1. With a perched water level and some signs of material face failure. Council has instructed that vehicles are not to use the haul road at the top of the slope. Further visual monitoring will be undertaken.

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI/D &MC	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D& MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18	27/07/18				27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D& MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18	09/07/18	P 10/07/18 P-PI 08/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18	11/07/18	P 12/07/18 P-PI 08/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1		L2A		L2				L3		L4				L5		L6		L7	
	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result
A1																				

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Date																				
A2																				
Date																				
A3																				
Date																				
B1																				
Date																				
B2	MC&PI/D&MC	P Sh-max			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S** / D&MC And S	P Sh-max	MC&PI/**D&S** / D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120	MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18			T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P03/08 /18
B3	MC&PI/DS*&D/D&MC	P Sh-70			MC&PI/DS&D/D&MC	P Sh-105														
Date	T- 19/06/18	P 20/07/18 F-P1 Moistur 08/08/18			T- 02/08/18	P 03/08/18														
B4	MC&PI/D&MC	P Sh-86			D&MC	P S-100														
Date	T- 19/06/18	P 20/07/18 P-PI 08/08/18			T-02/08/18	P 03/08/18														
B5	MC&PI	N/A B4L1			N/A B3L2	N/A B3L2														
Date	T- 19/06/18	N/A B4L1 P-PI 08/08/18			N/A B3L2	N/A B3L2														
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120	MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh-106			MC&PI/ D&MC	P Sh-max				
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18 P-PI 08/08/18				
C2	MC&PI/ **D&S**/D &MC/**P**	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D&S**/ D&MC And S	Sh-106	MC&PI/ **DS&D**/ D&MC And S	Sh-80		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18		
C3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 128			MC&PI/ **D&S**/D &MC/**P**	P Sh- 80														
Date	T- 19/06/18	P 23/07/18 P-PI 08/08/18			T- 02/08/18	P 06/08/18														
C4	MC&PI/DS&D/D&MC	Sh- 115			MC&PI/DS&D/D&MC	P Sh- 124														
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18			T- 02/08/18	P 03/08/18														
C5	MC&PI/D&MC	Sh-108			N/A C4L2	N/A C4L2														
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18			N/A C4L2	N/A C4L2														
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)	MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max				
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18	22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18				
D2	MC&PI/ **D&S**/D &MC	P Sh-120			MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/**D&DS**/ D&MC And S	Sh-108	MC&PI/ **DS&D**/ D&MC And	Sh-90		

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																S				
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18			21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18	T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18		
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58																		
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18																		
D4	MC&PI/ D&MC	P Sh-120		P sh- 95																
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18																
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1																
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18																
E1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5	MC&PI/ D&MC	P Sh-90		
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18			T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18	T- 08/08/18	P 09/08/18		
E2	MC&PI/ D&MC	P Sh-130 max			MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D/**D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88	MC&PI/ D&MC	P Sh-110		
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18			T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18	T- 09/08/18	P-10/08/18		
E3	MC&PI/ D&MC	P S68			MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D/**D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75	MC&PI/ D&MC	P Sh-78		
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18			T- 11/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18	T- 09/08/18	P-10/08/18		
E4	MC&PI/ D&MC	P S104			MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95	MC&PI/ DS&D/D &MC	P Sh-120		
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18			T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18	T- 09/08/18	P-10/08/18		
E5	MC&PI/ D&MC	P S108			MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D/**D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92	MC&PI/ DS&D/D &MC	P Sh-120		
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18			T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18	T- 09/08/18	P-10/08/18		
F1	MC&PI/ **D&S**/D &MC	P Sh-max			MC&PI/ **D&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142	N/A F2/L6	N/A F2/L6		
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18			T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18	T- 06/08/18	N/A F2/L6		
F2	MC&PI/ **D&S**/D &MC	P Sh-			MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D/** D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130	MC&PI/ DS&D/ D&MC	P Sh-78		
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18			T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18	T- 06/08/18	P 07/08/18		
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max			MC&PI/ **DS&D/**D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118	MC&PI/ DS&D/ D&MC	P Sh-78		
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18	T- 06/08/18	P 09/08/18		
F4	MC&PI/ D&MC	P Sh-130 Max			MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D/** D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67	MC&PI/ DS&D/ D&MC	P Sh-122		
Date	T- 04/07/18	P 05/07/18 F- PI			T- 06/07/18	P 09/07/18 P-PI			T- 16/07/18	P 17/07/18 P-PI	T- 24/07/18	P 25/07/18 P-PI			T- 27/07/18	P 30/07/18	T- 08/08/18	P 09/08/18		

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		Moisture 08/08/18				08/08/18				08/08/18		08/08/18								
F5	MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D/** D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6	N/A F4/L6	N/A F4/L6		
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18			T- 16/07/18	P 18/07/18 P-PI 08/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18	T- 27/07/18	P 30/07/18			T- 08/08/18	P 09/08/18	T- 08/08/18	P 09/08/18		
G1	MC&PI/ D&MC	P Sh-max			MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5	N/A G2L6	N/A G2L6		
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18			T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18	06/08/18	N/A G2L6		
G2	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122	MC&PI/ /D&MC	P Sh- 135		
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18			T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18	T- 03/08/18	P 07/08/18		
G3	MC&PI/ D&MC	Sh-			MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114	MC&PI/ D&MC	P Sh- 125		
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18			T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18	T- 03/08/18	P 07/08/18		
G4	MC&PI/ **D&DS**/D &MC	Sh-			MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ D&MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98	MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18			T- 05/07/18	P 05/07/18 P-PI 08/08/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18	T- 03/08/18	P 06/08/18	T- 07/08/18	P 09/08/18
G5	MC&PI/ **D&DS**/D &MC	P Sh-95			MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102	N/A G4L7	N/A G4L7		
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18			T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18			T- 03/08/18	P 06/08/18	T- 07/08/18	P 09/08/18		

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Grid Ref	**Result**	**Date Sampled**	**Date Testing commenced**	**Date Testing complete**
C2-L1		19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		
D4L-9		10/07/18		

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E5-L2		12/07/18		
E3-L3		18/07/18		
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		
E3-L5		01/08/18		
G2-L6		06/08/18		

Bund

Layer	Ref	Date	Pass/Fail

Streetscene
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Appendix 2 - Test Results - Permeability Tests

Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1177**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**06/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 G3-L6-C1	Core 2 G2-L6-C1	Core 3 F2-L6-C1		
Bulk Density	2.01	2.07	2.04		
Moisture Content	22	22	23		
Dry Density	1.65	1.69	1.66		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	3.3	0.2	1.2		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee — R Anstee, Materials and Field Testing Director	Date 07/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1197**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**08/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L6-C1	Core 2 F4-L6-C1	Core 3 G4-L7-C1	Core 4 E1-L6-C1	
Bulk Density	2.02	2.04	2.01	2.03	
Moisture Content	23	23	26	25	
Dry Density	1.64	1.66	1.60	1.63	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.1	1.3	0.4	0.5	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 09/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1214**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**09/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E4-L6-C1	Core 2 E5-L6-C1	Core 3 E3-L6-C1	Core 4 E2-L6-C1	
Bulk Density	2.07	2.08	2.05	2.07	
Moisture Content	23	21	21	21	
Dry Density	1.69	1.71	1.69	1.71	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	0.1	1.0	2.2	1.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee — R Anstee, Materials and Field Testing Director	Date 10/08/2018	Fig

Streetscene
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NP20 4UR

Appendix 4 – Field Logs

Available on request

Streetscene
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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
CITY COUNCIL
CYNGOR DINAS
Casnewydd

Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1178	G3-L6 06.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1179	G3-L6 06.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1180	G3-L6 06.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	125	
1181	G2-L6 06.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1182	G2-L6 06.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1183	G2-L6 06.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	135	
1184	F2-L6 06.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1185	F2-L6 06.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	78	
1186	F2-L6 06.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	118	

QA Ref.	cjassociates	Approver	Date	Fig.
	King Road Avenue, Bristol, BS11 9HF	R. Anstee	07/08/2018	
Rev 1.0	Tel 0117 9821473	R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1198	F3-L6 08.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	115	
1199	F3-L6 08.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1200	F3-L6 08.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1201	F4-L6 08.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	130	
1202	F4-L6 08.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130	
1203	F4-L6 08.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	122	
1204	G4-L7 08.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	90	
1205	G4-L7 08.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1206	G4-L7 08.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1207	E1-L6 08.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	90	
1208	E1-L6 08.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1209	E1-L6 08.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	09/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1215	E4-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1216	E4-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1217	E4-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1218	E5-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1219	E5-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1220	E5-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1221	E3-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1222	E3-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	135	
1223	E3-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	78	
1224	E2-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1225	E2-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	110	
1226	E2-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	10/08/2018	
		R Anstee, Materials and Field Testing Director		

Streetscene
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Appendix 6 – PI, PL, MC, LL Results

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C1 L5	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	47	20	27		
C4 L-4	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	47	20	27		
D1 L5	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	20	27		
E1 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	49	21	28		
F1 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	48	20	28		
G1 L1	GT8	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13055

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	2	Jul-18
Date of receipt of testing instructions	2	Jul-18
Date testing started:	4	Jul-18
Date of issue:	9	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
B2 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY				100	50	21	29		
C2 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY				100	48	20	28		
D2 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY				100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		C2L6	B	Dark grey slightly micaceous SILT and CLAY with rare fossil fragments.	2.69	2
GT5		D2L6	B	Dark grey SILT and CLAY with rare fossil fragments.	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27738

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

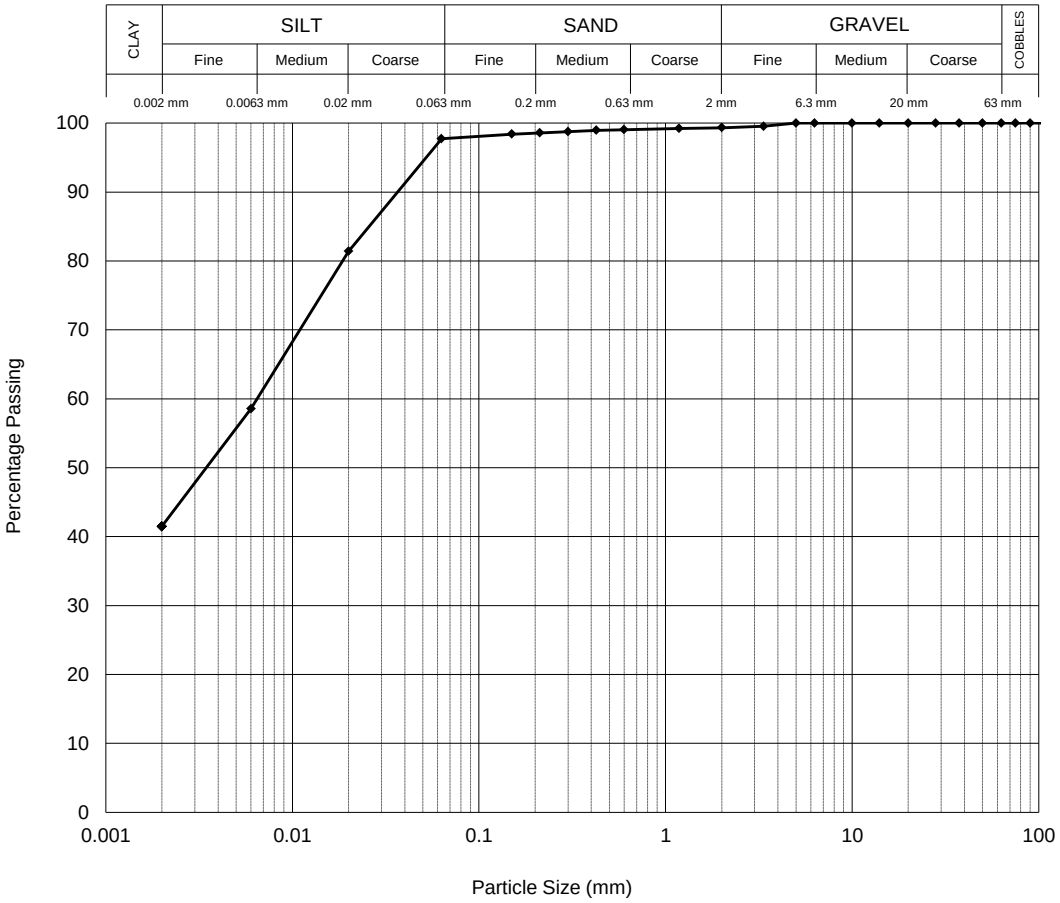
BH / TP No.	GT3
Sample Ref	C2L6
Sample Type	B

Description

Dark grey slightly micaceous SILT and CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	59
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27738

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

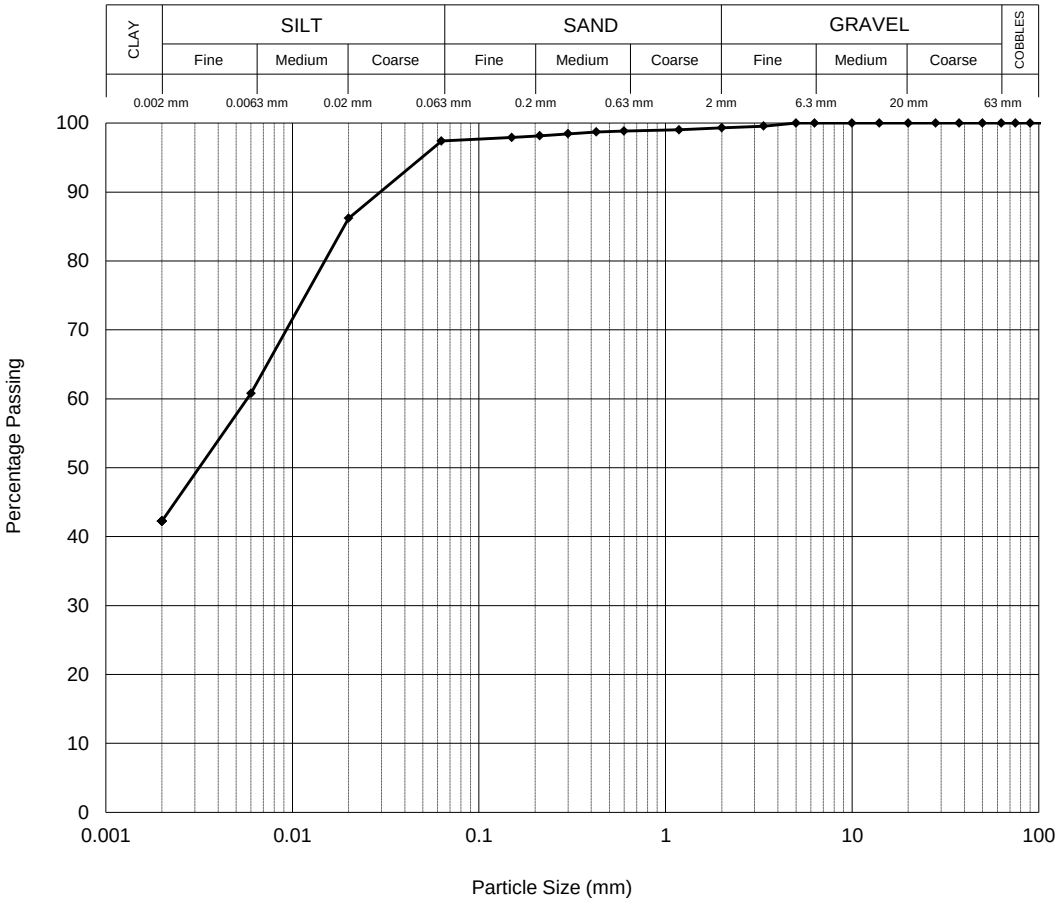
BH / TP No.	GT5
Sample Ref	D2L6
Sample Type	B

Description

Dark grey SILT and CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	61
2 µm	42
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27738

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13058

Number of samples submitted for testing:	7	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	3	Jul-18
Date of receipt of testing instructions	3	Jul-18
Date testing started:	4	Jul-18
Date of issue:	9	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

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1429

Approved by :
Lisa Maiden

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-5	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.9	100	49	21	28		
F2 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	46	21	25		
G2 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	47	20	27		
G3 L1	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	45	20	25		
G4 L1	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	49	20	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT6		F2L1	B	Dark grey SILT and CLAY with rare fossil and brick fragments.	2.72	2
GT7		G4L1	B	Dark grey clayey SILT with rare fossil and brick fragments.	2.66	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27739

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

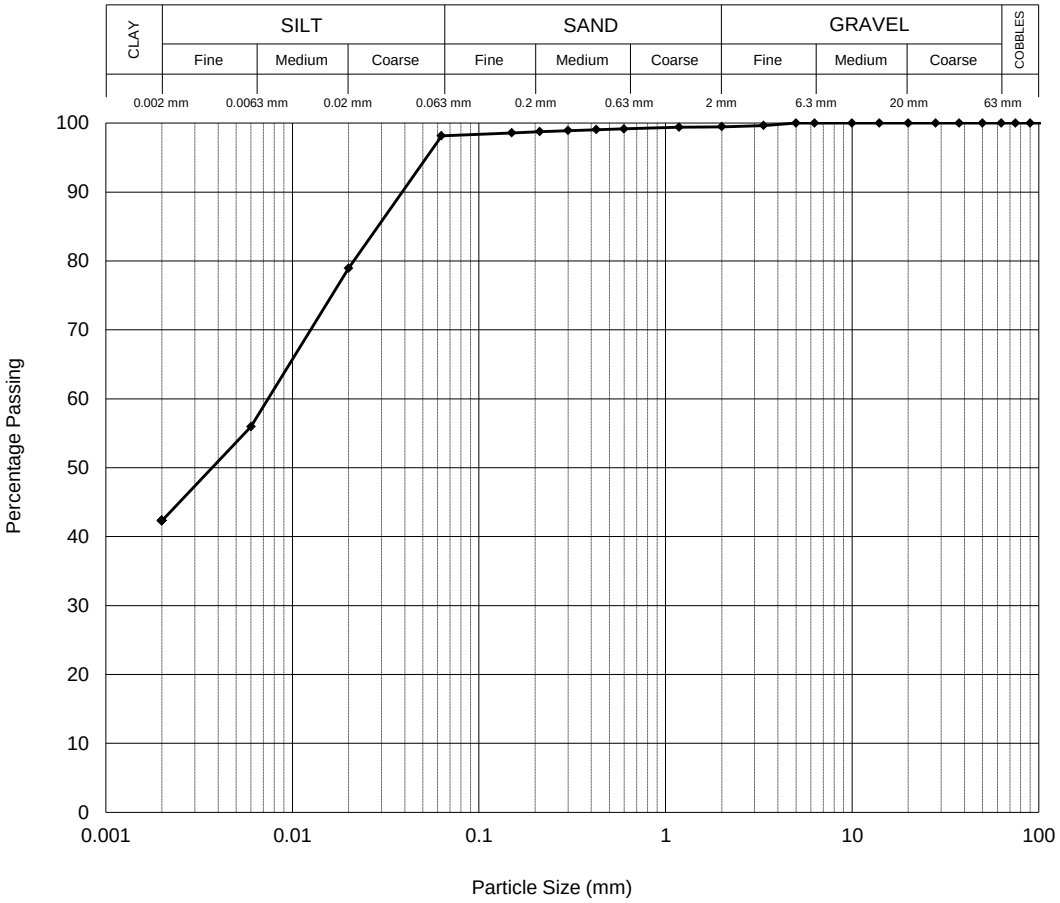
BH / TP No.	GT6
Sample Ref	F2L1
Sample Type	B

Description

Dark grey SILT and CLAY with rare fossil and brick fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	79
6 µm	56
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27739

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

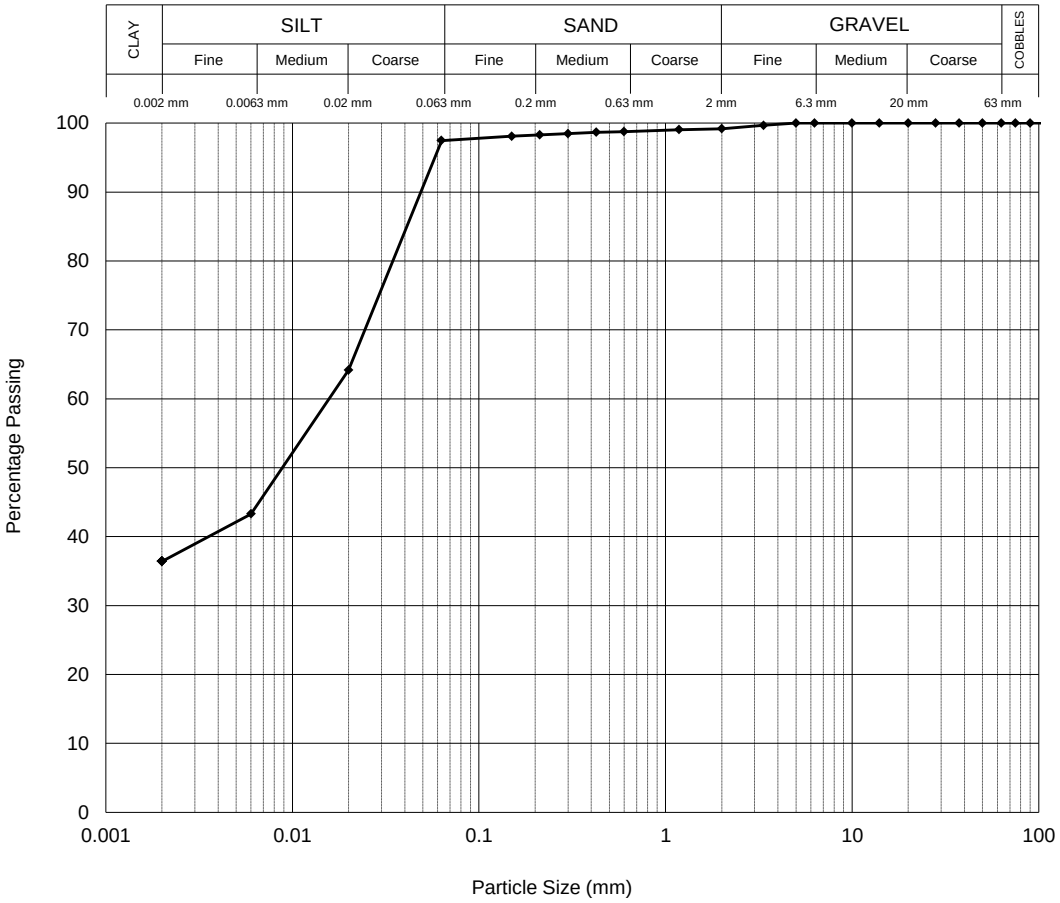
BH / TP No.	GT7
Sample Ref	G4L1
Sample Type	B

Description

Dark grey clayey SILT with rare fossil and brick fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	64
6 µm	43
2 µm	36
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	61
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27739

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF

(Ref 1532705307)

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-6	GT9	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.2	100	53	21	32		
E1 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			18.9	100	48	20	28		
E2 L1	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	47	20	27		
F1 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.0	100	47	20	27		
F3 L1	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.5	100	47	21	26		
F4 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.8	100	49	21	28		
G1 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
G2 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.0	100	49	23	26		
G3 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.8	97	50	20	30		
G4 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	51	21	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

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Approved By: Lisa Maiden

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-8	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.1	100	48	19	29		
E2 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			26.0	100	49	21	28		
F5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.4	100	49	21	28		
G5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.2	100	51	21	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-7	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.8	100	50	21	29		
F2 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	50	21	29		
F3 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	49	21	28		
F4 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	50	21	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-9	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.6	100	48	20	28		
E3 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	47	21	26		
E4 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	50	21	29		
E5 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.3	100	47	21	26		
F1 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-10	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	22	30		
E1 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			29.2	100	50	20	30		
E3 L2	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	50	22	28		
G2 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	52	21	31		
G3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-11	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	49	21	28		
E4 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	48	20	28		
E5 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.3	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F3 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	46	21	25		
F4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.4	100	47	20	27		
F5 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	49	22	27		
G4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.4	100	49	21	28		
G5 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	99	50	20	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13095

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Date (s) sampled and received at laboratory:	17	Jul-18
Date of receipt of testing instructions	17	Jul-18
Date testing started:	17	Jul-18
Date of issue:	9	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	47	22	25		
D5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.1	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L1	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	21	27		
E2 L3	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	22	27		
E3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.6	100	49	22	27		
E4 L3	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.3	100	51	22	29		
E5 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

cjassociates

Summary of Classification Test Results

Project No.: AG0390

Project Name: Docksway Cell 4

Hole No.	Sample Ref	Sample Top	Sample Base	Sample Type	Soil Description	Density bulk Mg/m3	Density dry Mg/m3	w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
B3 L1	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			27.5	100	47	21	26		
B4 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.6	100	50	22	28		
B5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	21	31		
C3 L1	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.6	88	49	22	27		
C5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D3 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	49	21	28		
G2 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.2	100	50	21	29		
G3 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
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Liquid Limit
4pt cone unless :
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Particle density
sp - small pyknometer
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Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.0	100	51	22	29		
F3 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	48	21	27		
G4 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.3	100	48	22	26		
G5 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.0	99	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 08/08/2018 00:00

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Table 1

sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
E1 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.2	100	50	21	29		
E2 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.4	100	47	21	26		
F4 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.3	100	49	22	27		
F5 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	99	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
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Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
E3 L4	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	48	21	27		
E4 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.6	100	47	20	27		
E5 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	49	20	29		
G1 L5	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

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CYNGOR DINAS
Casnewydd

Appendix 7 – Photographs

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Monday 06 August 2018



Wednesday 08 August 2018

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Tuesday 07 August 2018 Material in stockpile as delivered.	**Wednesday 08 August 2018 tyre bales delivered to site and stored pending topographical survey**
	
Friday 10 August 2018 Grid G2 piezometer location at 7.8m G2 to G3 and 9.3m G2 to H2	**Thursday 09 August 2018 material trimmed at D3**

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10 August 2018 Grid D1 to B1 perched leachate and slope stability
Also note finish clay level in C1 Blue painted mark at top of brown fill material level.



10 August 2018 Grid C1 localised slip and flowing leachate

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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 09 WE 19/08/18

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Project Ref: 2506
Date: 19-08-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		19-08-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

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3.3 Layer 1
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3.6 Layer 4

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4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

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5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

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2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Monday heavy rain over the weekend prevented access to the clay although the weather was sunny. Tuesday was sunny. Wednesday was drizzle. Thursday rain in the am and sunny in the pm. Friday sunny

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile with generally good. Some delay with delivery of clay.

Up to the 15 August 2018, 33,133 tonnes of material was delivered to site.

The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B1L2, C1L7, C2L7 and D1L7

Testing by CJ Associates was not undertaken 07/08/18, 10/08/18, 13/08/18 and 16/08/18 due to weather delaying progress.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

Three 10-ton front loader, 2 excavators, dozer, roller and bowser were on site. Some delay was experienced as rain prevented material installation on site.

3.3a Additional Layers
B1L2A, B1L2B, D1L5A, C1L5A
3.3b Levelling the Area
No work undertaken
3.3 Layer 1
B1
3.4 Layer 2
B1

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3.5 Layer 3
No work undertaken
3.6 Layer 4
No work undertaken
3.7 Layer 5
No work undertaken
3.8 Layer +6
C1L6, C1L7, C2L7, D1L6, D1L7
4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

9 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
9 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at C1L7 on 17 August 2018.
no results have been received this week.

4.3 MC and PI,

Some details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

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Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 89KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped 13, 14, 15 & 17 August 2018. On Tuesday 14 August 2018, 1 tanker load taken 8am to 10:30 am.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is being prioritised for completion to final level.

Following the removal of a tanker of leachate, there is noticeably less leachate flowing into the cell 4 site. Following rain on Thursday there was an increased flow of leachate and surface water (water from above protective barrier mat). Some weathering of the cut face surface has been noted.

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D& MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D& MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1	L2A	L2B	L2	L3	L4	L5	L5A	L6	L7

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	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																								
Date																								
A2																								
Date																								
A3																								
Date																								
B1	MC&PI/DS&D/D&MC	P Sh-125	MC&PI/DS&D/D&MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/D&MC	P Sh-150																
Date	T-13/06/18	P 15/08/18	T-14/06/18	P 15/08/18	T-16/06/18	N/A B1L2	T-16/06/18	P 20/08/18																
B2	MC&PI/D&MC	P Sh-max					MC&PI/D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/D&MC And S	Sh-120			MC&PI/D&MC And S	Sh-100	MC&PI/D&MC And S	P Sh-96
Date	T-19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P-28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P03/08/18
B3	MC&PI/DS*&D/D&MC	P Sh-70					MC&PI/DS&D/D&MC	P Sh-105																
Date	T-19/06/18	P 20/07/18 F-P1 Moistur 08/08/18					T-02/08/18	P 03/08/18																
B4	MC&PI/D&MC	P Sh-86					D&MC	P S-100																
Date	T-19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18																
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2																
Date	T-19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2																
C1	MC&PI/**D&S**/D&MC	P Sh-125	MC&PI/D&MC and S	P Sh-120			MC&PI/**D&S**/ D&MC And S	P Sh-max			MC&PI/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh-106			MC&PI/D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/D&MC	P Sh-89	MC&PI/DS&D/D&MC	P Sh-125
Date	T-20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T-29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T-15/08/18	P 16/08/18	T-17/08/18	P 20/08/18
C2	MC&PI/**D&S**/D&MC/**P**	P Sh-max					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh -122			MC&PI/**D&DS**/ D&MC And S	Sh-106			MC&PI/**DS&D**/ D&MC And S	Sh-80		
Date	T-19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18		
C3	MC&PI/**D&S**/D&MC/**P**	P Sh- 128					MC&PI/**D&S**/D&MC/**P**	P Sh- 80																
Date	T-19/06/18	P 23/07/18 P-PI 08/08/18					T-02/08/18	P 06/08/18																
C4	MC&PI/DS&D/D&MC	Sh- 115					MC&PI/DS&D/D&MC	P Sh- 124																
Date	T-18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T-02/08/18	P 03/08/18																
C5	MC&PI/D&MC	Sh-108					N/A C4L2	N/A C4L2																
Date	T-	P					N/A	N/A																

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	18/07/18	20/07/18 P-PI 08/08/18					C4L2	C4L2																
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D&MC	P Sh-max	MC&PI/DS&D/D&MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D&MC	P Sh-125
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18	T- 17/08/18	P 20/08/18
D2	MC&PI/ **D&S**/D&MC	P Sh-120					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS/** D&MC And S	P Sh-122			MC&PI/**D&DS/** D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18		
D3	MC&PI/ **D&S**/D&MC/**P**	P Sh- 58																						
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18																						
D4	MC&PI/ D&MC	P Sh-120		P sh- 95																				
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18																				
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1																				
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18																				
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18	T- 14/08/18	P 16/08/18
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D&MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D&MC	P Sh-88			MC&PI/ D&MC	P Sh-110		
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18		
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D&MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D&MC	P Sh-135			MC&PI/ DS&D/D&MC	P Sh-75			MC&PI/ D&MC	P Sh-78		
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18		
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D&MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D&MC	P Sh-120		
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18		
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D&MC	P S-110			MC&PI/ **DS&D**/D&MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D&MC	P Sh-92			MC&PI/ DS&D/D&MC	P Sh-120		
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18		
F1	MC&PI/ **D&S**/D&MC	P Sh-max					MC&PI/ **D&S**/D&MC	P Sh-124			MC&PI/ **D&S**/D&MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6		
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18					T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6		

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F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78		
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18		
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78		
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18			T- 06/08/18	P 09/08/18		
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122		
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18		
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6		
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18		
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6		
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6		
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135		
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18		
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125		
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18		
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ D&MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 06/08/18	T- 07/08/18	P 09/08/18
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7		
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 06/08/18			T- 07/08/18	P 09/08/18		

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record

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D&MC - Dry density & Moisture content 1/250m3 (1 per Cells/layer) Core (2No 1 spare)
P - Permeability triaxial cell – 1/2000m3 (1 per 10 Cells/layer) Core (2No 1 spare)

Permeability

Grid Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		
D4L-9		10/07/18		
E5-L2		12/07/18		
E3-L3		18/07/18		
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability Tests

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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1282**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**14/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

B1L2A - Additional layer

Location Reference	Core 1 B1-L1-C1	Core 2 B1-L2-C1			
Bulk Density	2.08	2.02			
Moisture Content	19	22			
Dry Density	1.75	1.66			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	3.3	2.8			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1301**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**15/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L6-C1	Core 2 D1-L5A-C1	Core 3 D1-L6-C1	Core 4 E1-L7-C1	
Bulk Density	2.03	2.05	2.05	2.06	
Moisture Content	24	23	23	21	
Dry Density	1.63	1.67	1.67	1.70	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	0.9	1.2	0.9	2.4	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 16/08/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1332**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L2-C1	Core 2 D1-L7-C1	Core 3 C1-L7-C1		
Bulk Density	2.07	2.07	2.04		
Moisture Content	21	21	22		
Dry Density	1.72	1.71	1.68		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	2.0	1.9	2.1		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 18/08/2018	Fig

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Appendix 4 – Field Logs

Available on request

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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1283	B1-L1 14.08.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1284	B1-L1 14.08.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	140	
1285	B1-L1 14.08.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	125	
1286	B1-L2 14.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1287	B1-L2 14.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	108	
1288	B1-L2 14.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	15/08/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1302	C1-L6 15.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	89	
1303	C1-L6 15.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	108	
1304	C1-L6 15.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	98	
1305	D1-L5A 15.08.18 HSV1	Layer 5A	Grey slightly sandy slightly gravelly CLAY	108	
1306	D1-L5A 15.08.18 HSV2	Layer 5A	Grey slightly sandy slightly gravelly CLAY	112	
1307	D1-L5A 15.08.18 HSV3	Layer 5A	Grey slightly sandy slightly gravelly CLAY	150+	
1308	D1-L6 15.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	124	
1309	D1-L6 15.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1310	D1-L6 15.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	104	
1311	E1-L7 15.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	132	
1312	E1-L7 15.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1313	E1-L7 15.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	17/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1333	B1-L2 17.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1334	B1-L2 17.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1335	B1-L2 17.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1336	D1-L7 17.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	130	
1337	D1-L7 17.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1338	D1-L7 17.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	135	
1339	C1-L7 17.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	145	
1340	C1-L7 17.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150	
1341	C1-L7 17.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	125	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	18/08/2018	
		R Anstee, Materials and Field Testing Director		

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Appendix 6 – PI, PL, MC, LL Results

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13048

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	28	Jun-18
Date of receipt of testing instructions	28	Jun-18
Date testing started:	29	Jun-18
Date of issue:	17	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
B2 L5	1	0.00		B	Dark grey slightly sandy silty CLAY			20.1	100	48	19	29		
C1 L4	4	0.00		B	Dark grey slightly sandy silty CLAY			21.0	100	50	21	29		
C2 L5	2	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	49	22	27		
D2 L5	5	0.00		B	Dark grey slightly sandy silty CLAY			20.6	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		C2-L5			B	Dark grey silty CLAY.	2.71	2
GT6		D2-L5			B	Dark grey silty CLAY	2.72	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27702

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

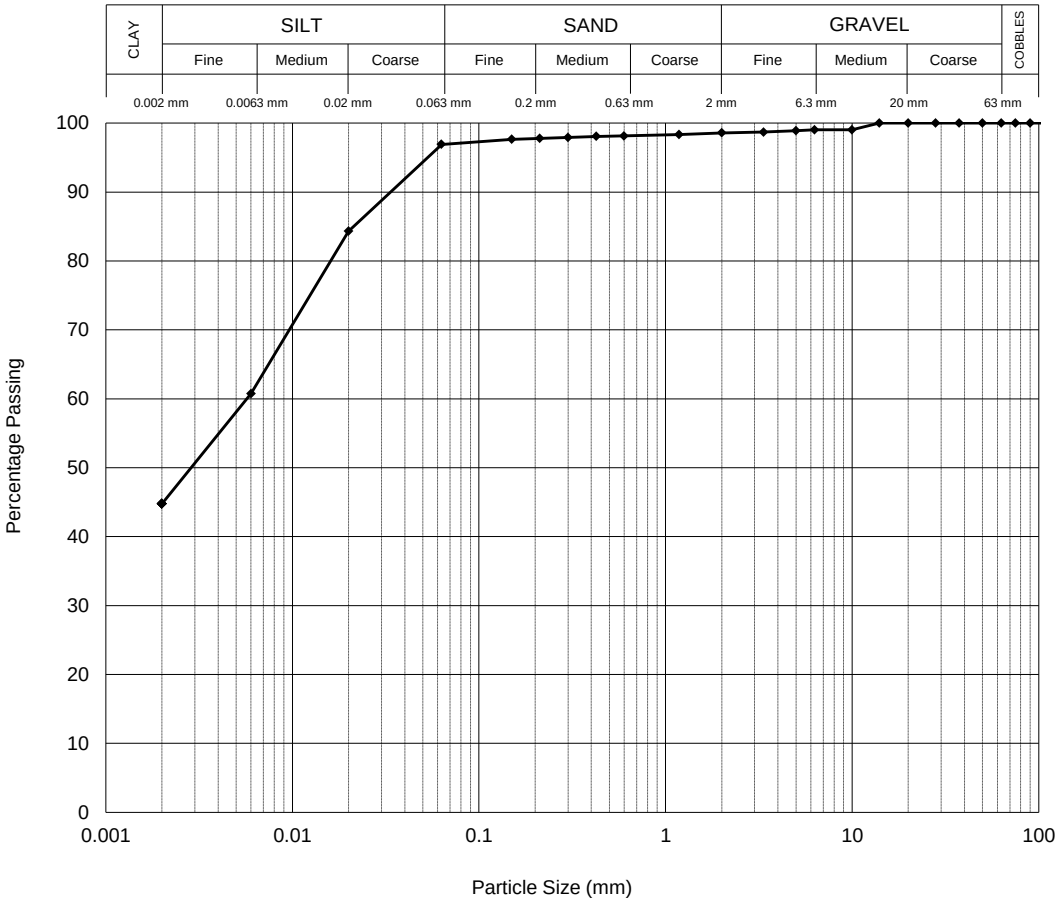
BH / TP No.	GT3
Sample Ref	C2-L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	99
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	61
2 µm	45
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	52
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27702

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

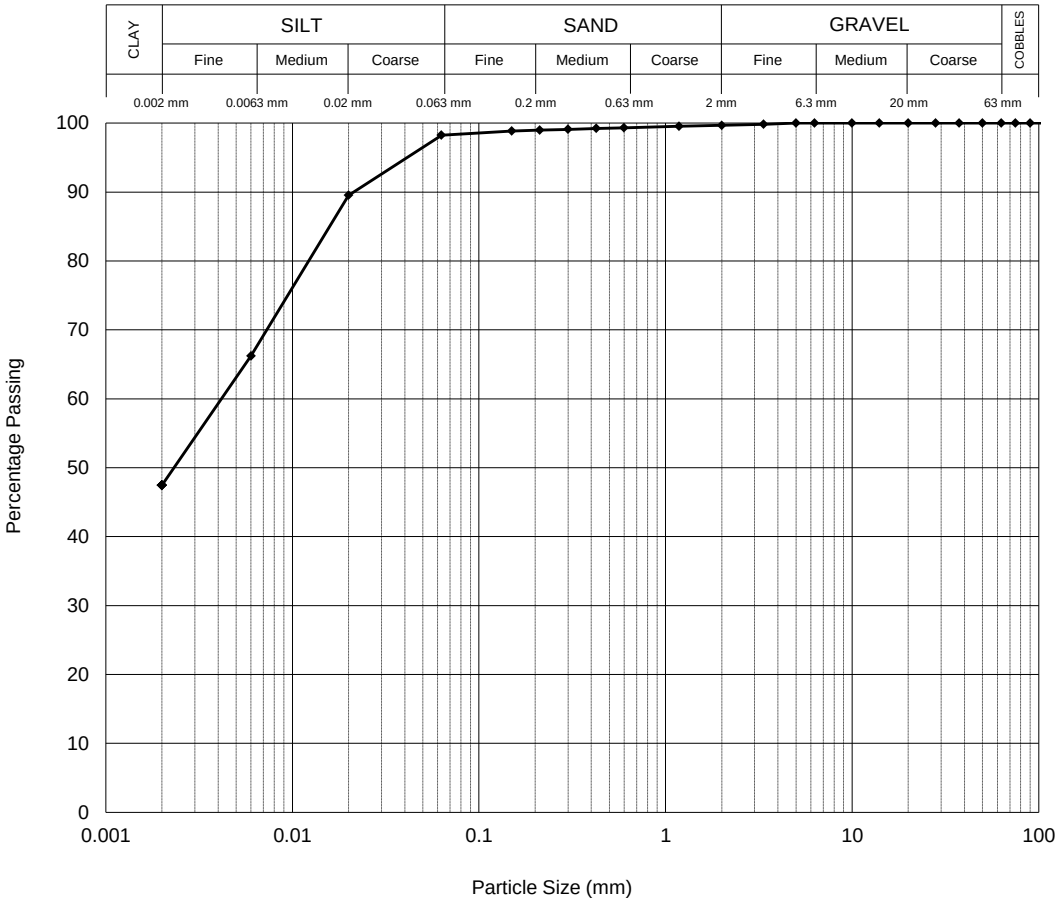
BH / TP No.	GT6
Sample Ref	D2-L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	90
6 µm	66
2 µm	47

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	51
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27702

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13072

Number of samples submitted for testing:	6	sample (s)

Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	9	Jul-18
Date of receipt of testing instructions	9	Jul-18
Date testing started:	10	Jul-18
Date of issue:	10	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-8	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.1	100	48	19	29		
E2 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			26.0	100	49	21	28		
F5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.4	100	49	21	28		
G5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.2	100	51	21	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT6		C4L-8		Dark grey silty CLAY with rare fossil fragments.	2.69	2
GT4		G5L1		Dark grey silty CLAY with rare fossil fragments.	2.74	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27762

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1533886408)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

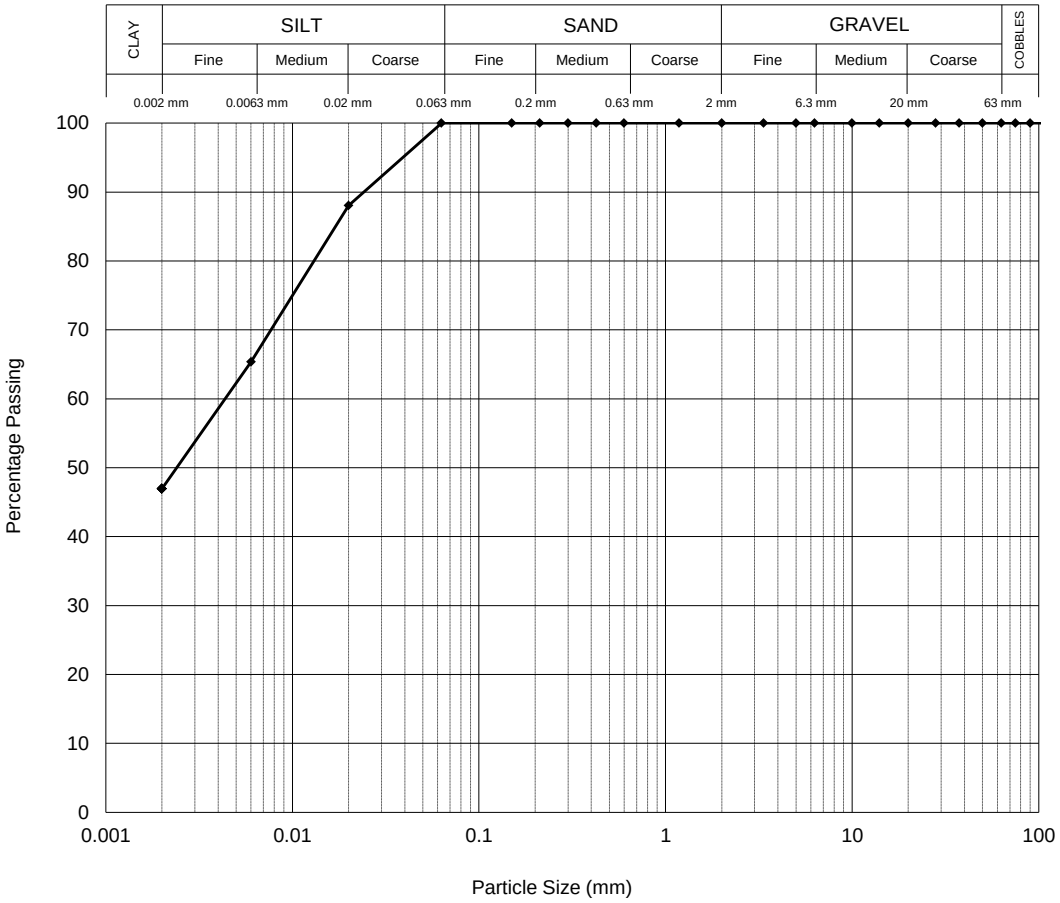
BH / TP No.	GT4
Sample Ref	G5L1

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	100
212 µm	100
150 µm	100
63 µm	100



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	65
2 µm	47

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	0
Silt	53
Clay	47

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27762

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

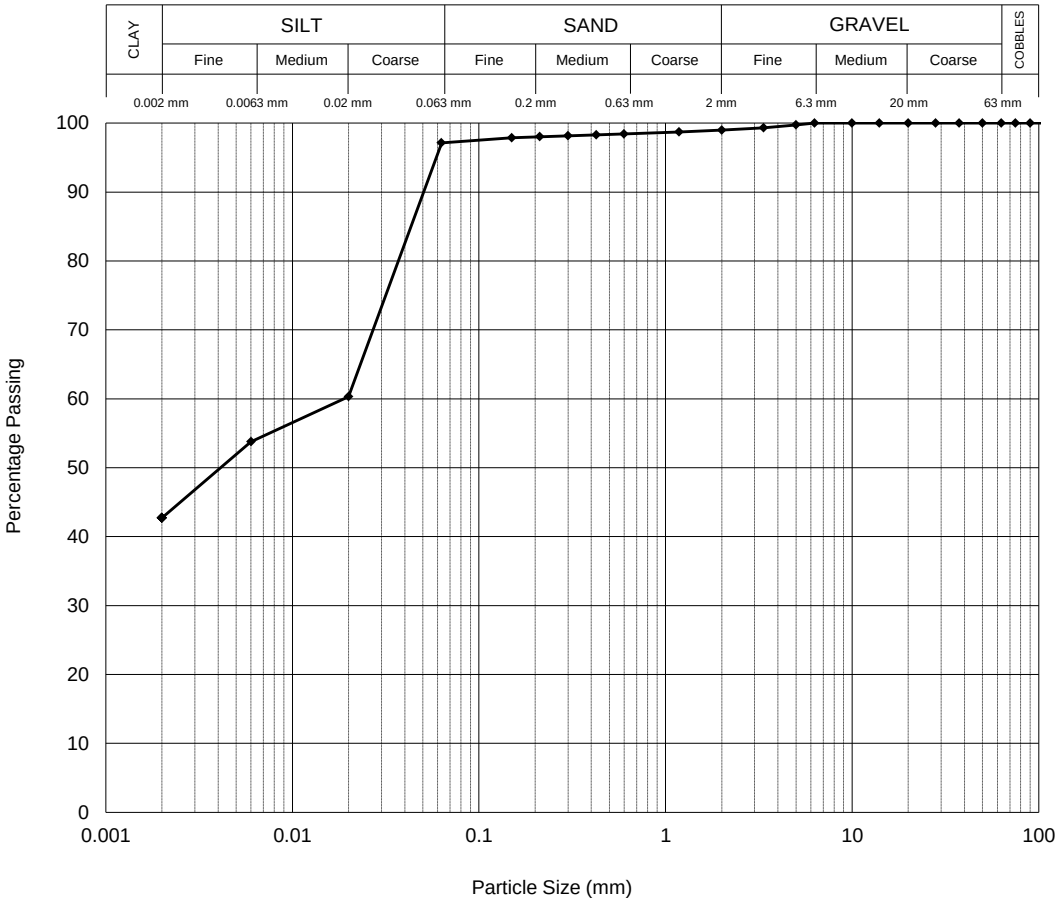
BH / TP No.	GT6
Sample Ref	C4L-8

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	60
6 µm	54
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	54
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27762

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13081

Number of samples submitted for testing:	8	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	3	test(s)
Grading	3	test(s)
Date (s) sampled and received at laboratory:	11	Jul-18
Date of receipt of testing instructions	11	Jul-18
Date testing started:	12	Jul-18
Date of issue:	10	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-10	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	22	30		
E1 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			29.2	100	50	20	30		
E3 L2	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	50	22	28		
G2 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	52	21	31		
G3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		G3L3		Dark grey silty CLAY with rare fossil fragments.	2.70	2
GT5		D4L-10		Dark grey silty CLAY with rare rootlets.	2.69	2
GT8		E3L2		Dark grey silty CLAY.	2.76	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

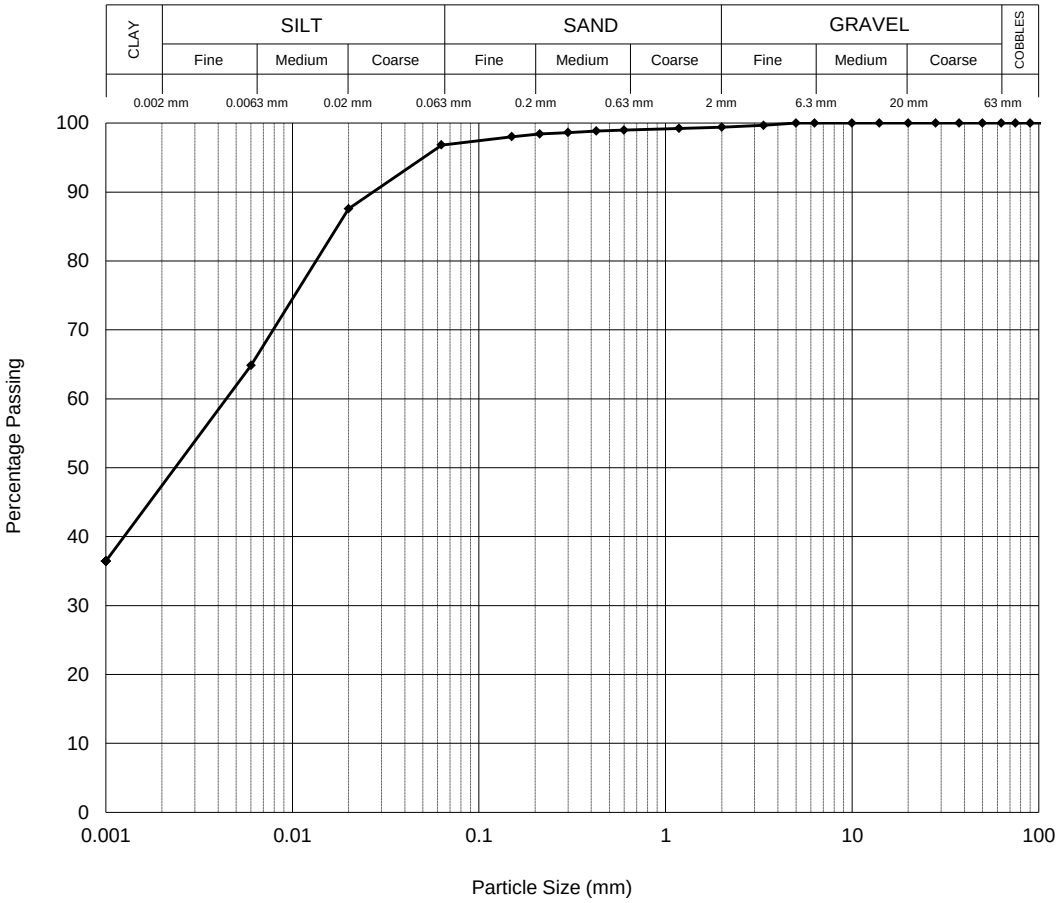
BH / TP No.	GT2
Sample Ref	G3L3

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	65
1 µm	36

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

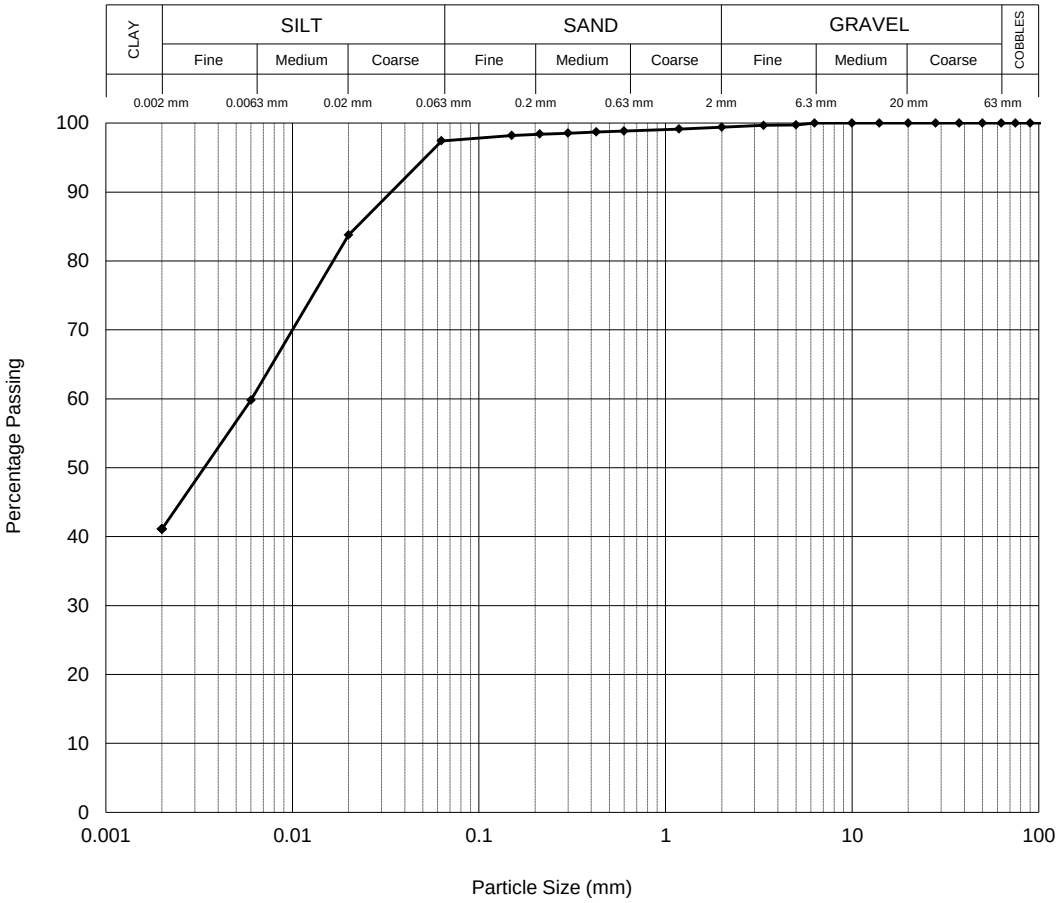
BH / TP No.	GT5
Sample Ref	D4L-10

Description

Dark grey silty CLAY with rare rootlets.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	60
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

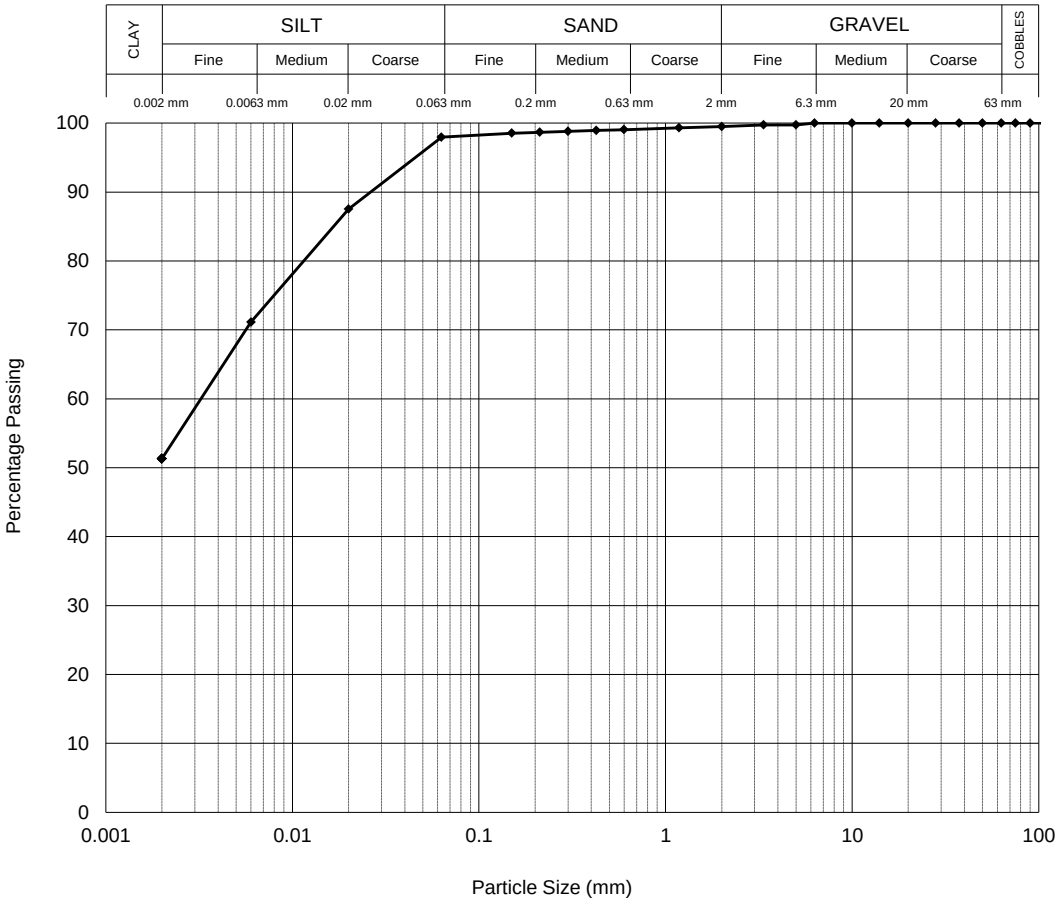
BH / TP No.	GT8
Sample Ref	E3L2

Description

Dark grey silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	71
2 µm	51

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	47
Clay	50

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13089

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	16	Jul-18
Date of receipt of testing instructions	16	Jul-18
Date testing started:	17	Jul-18
Date of issue:	17	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

1429

Approved by :

Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F3 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	46	21	25		
F4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.4	100	47	20	27		
F5 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		F4L3	B	Dark grey silty CLAY	2.70	2
GT5		F5L2	B	Dark grey silty CLAY	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
17/08/2018

Project Number:

GEO / 27812

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

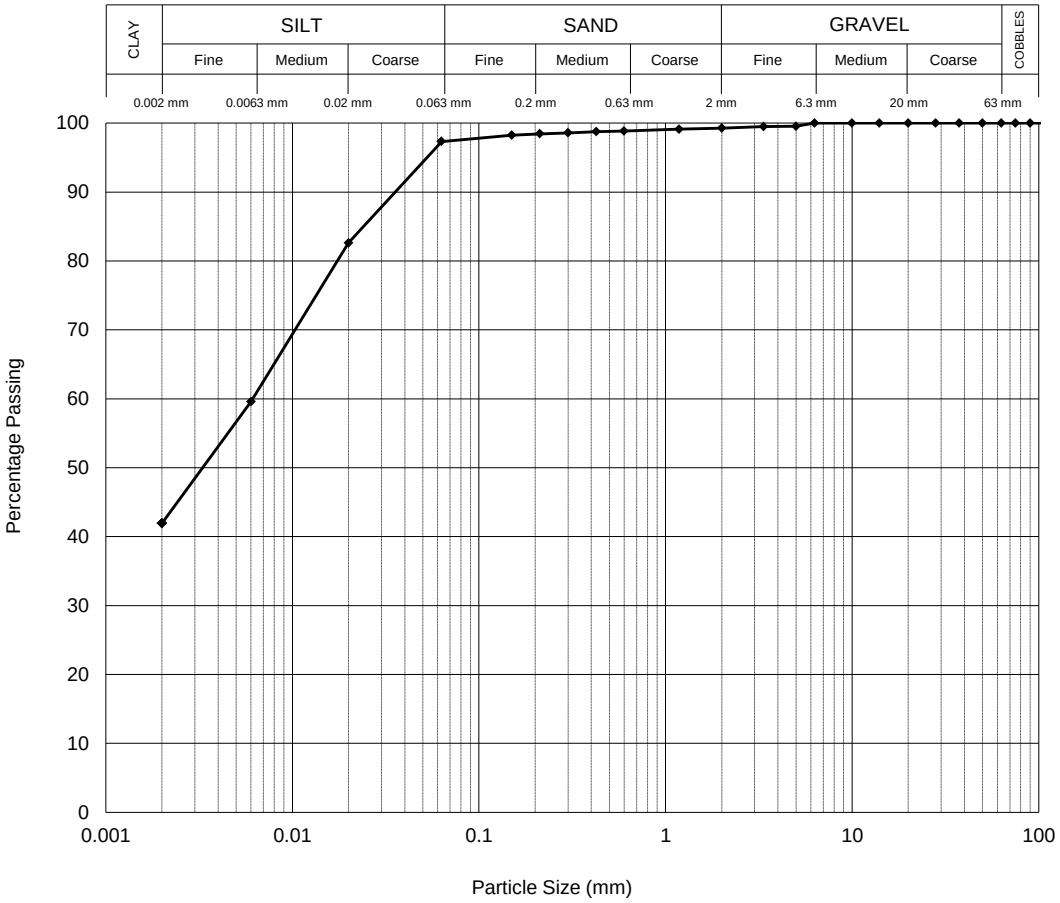
BH / TP No.	GT2
Sample Ref	F4L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	60
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
17/08/2018

Project Number:

GEO / 27812

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

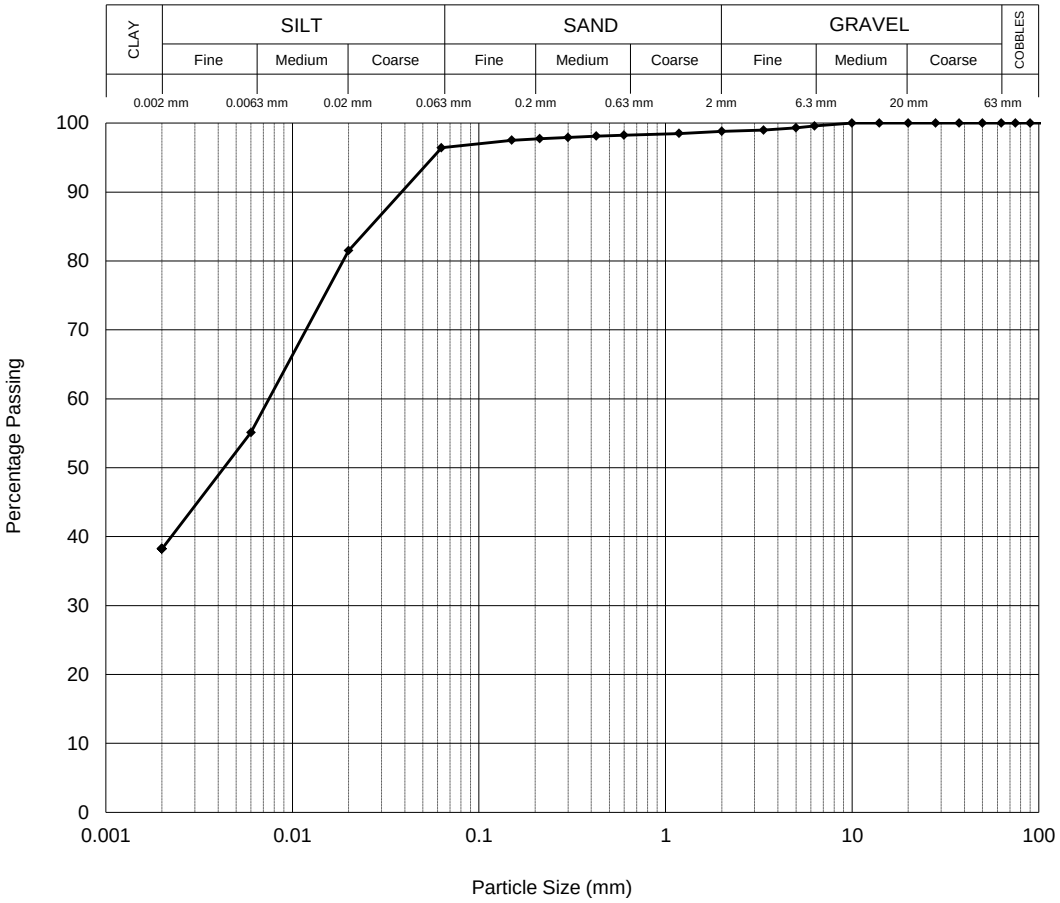
BH / TP No.	GT5
Sample Ref	F5L2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	82
6 µm	55
2 µm	38
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	58
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
17/08/2018

Project Number:

GEO / 27812

Project Name:

DOCKSWAY CELL 4
AG0390

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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13090

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	13	Jul-18
Date of receipt of testing instructions	13	Jul-18
Date testing started:	16	Jul-18
Date of issue:	14	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	49	22	27		
G4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.4	100	49	21	28		
G5 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	99	50	20	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT4		F2L3	BB	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27813

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

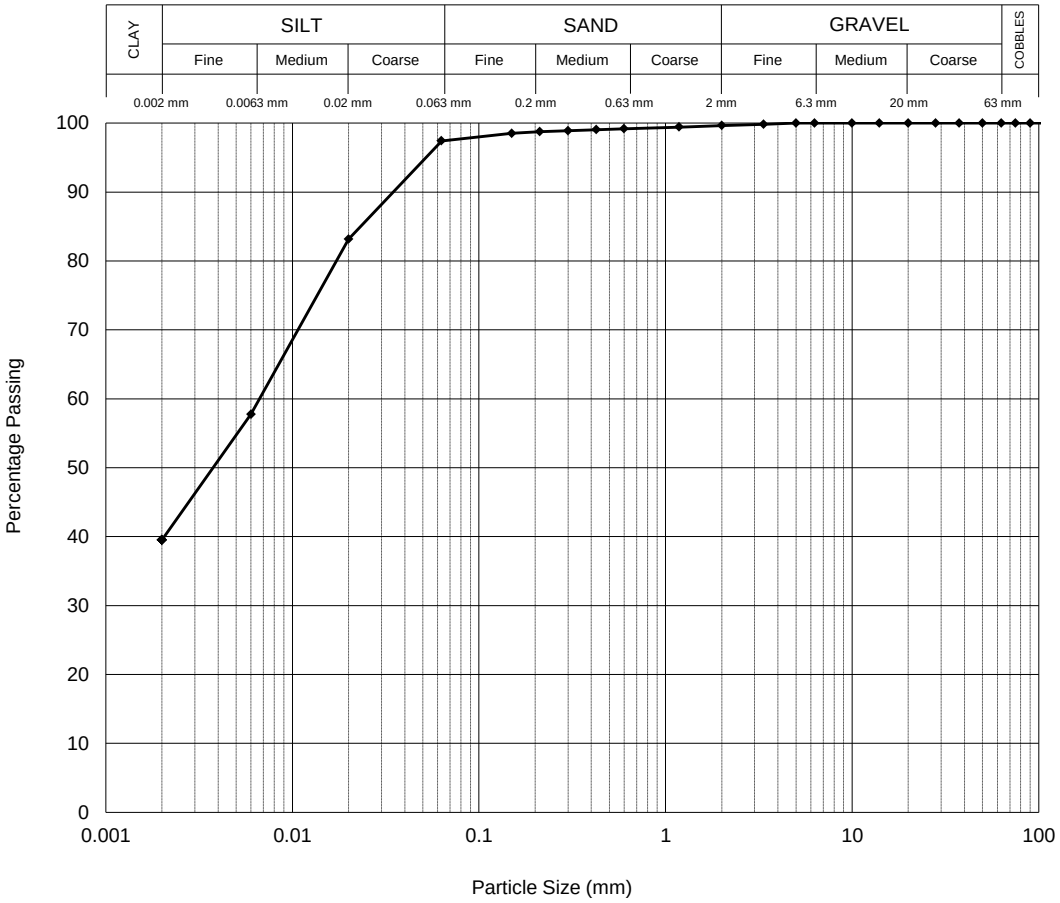
BH / TP No.	GT4
Sample Ref	F2L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	58
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	58
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27813

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		E2L3	BB	Dark grey silty CLAY	2.69	2
GT6		E5L3	BB	Dark grey silty CLAY	2.67	2
GT8		C4L1	BB	Dark grey silty CLAY	2.67	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

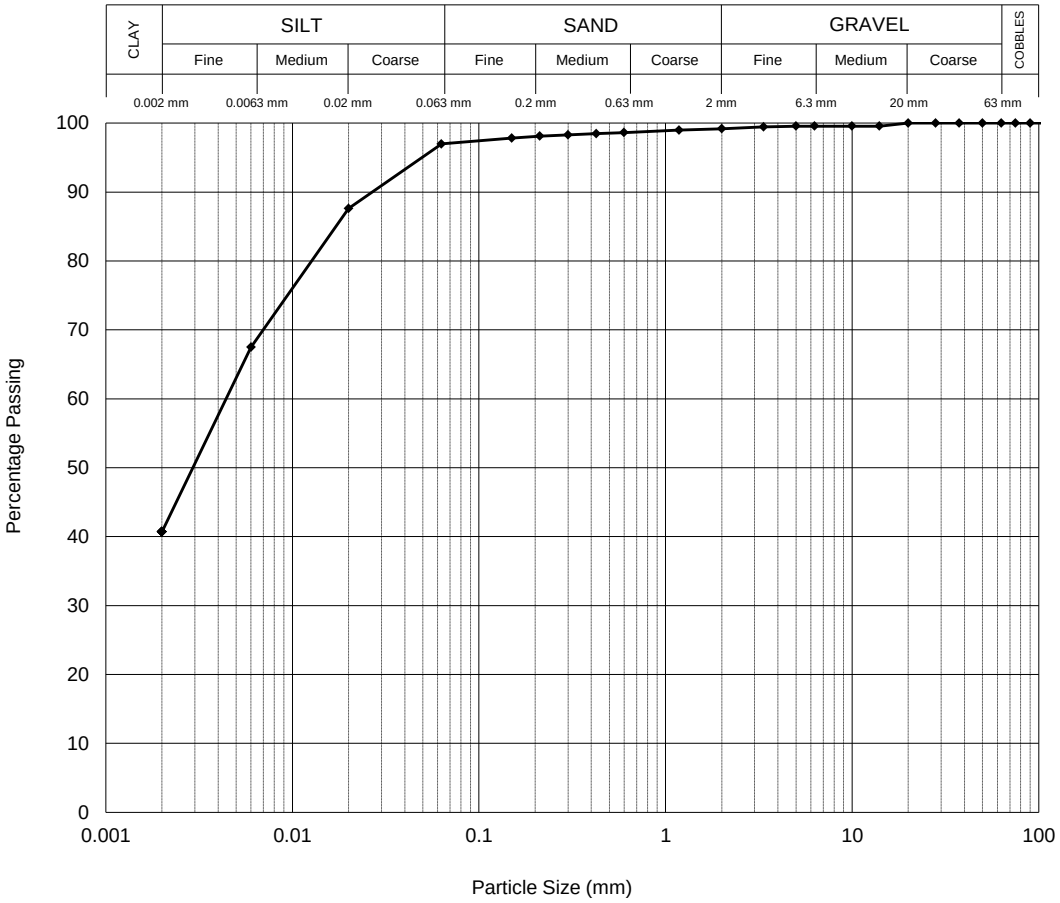
BH / TP No.	GT3
Sample Ref	E2L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	67
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

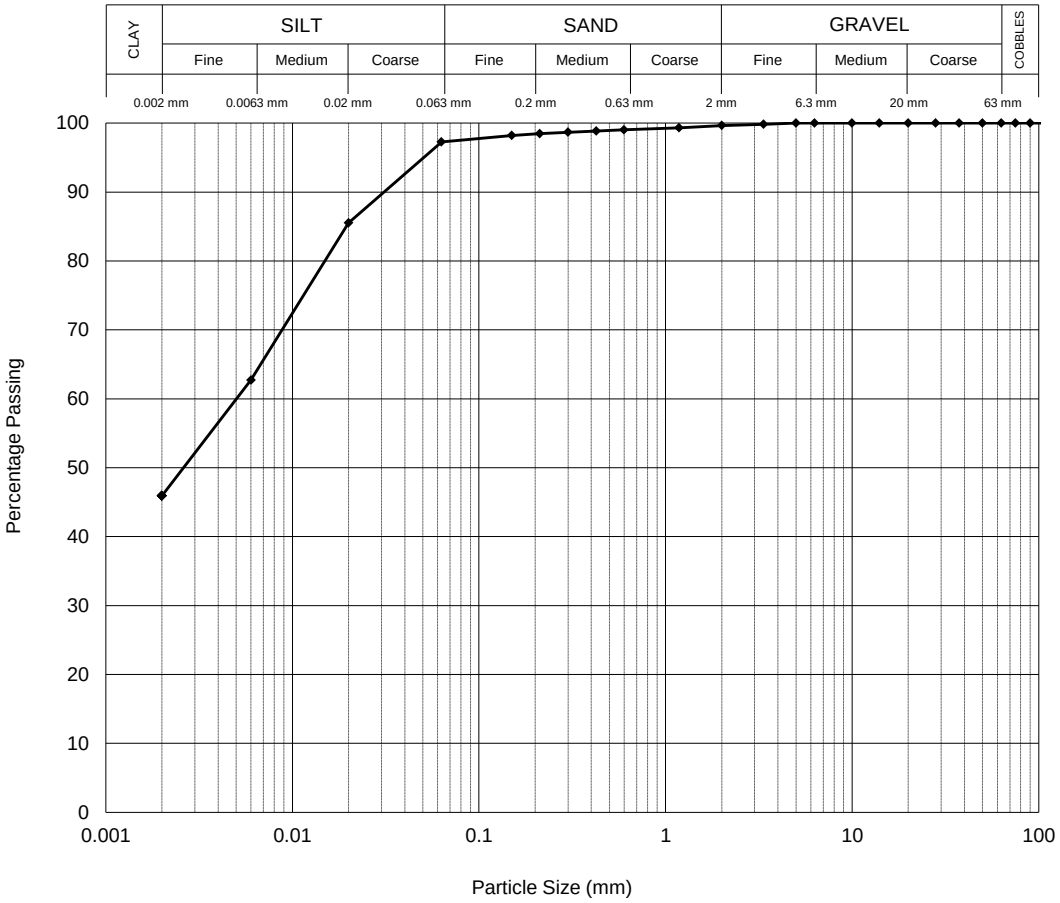
BH / TP No.	GT6
Sample Ref	E5L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	46

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	51
Clay	47

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

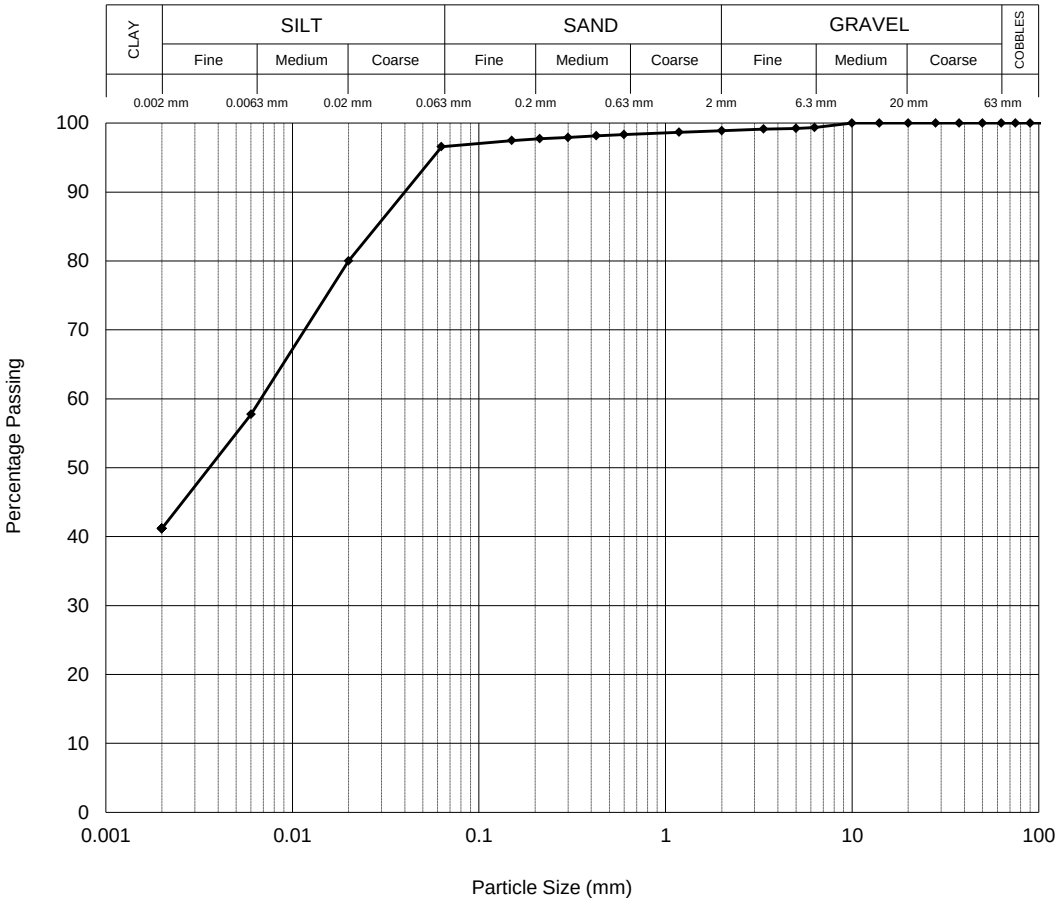
BH / TP No.	GT8
Sample Ref	C4L1
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F1 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			22.1	100	47	21	26		
F2 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			23.0	100	49	21	28		
F3 L5	GT10	0.00		B	Dark grey slightly sandy CLAY			20.6	100	47	20	27		
G2 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			23.1	100	51	22	29		
G3 L5	GT8	0.00		B	Dark grey slightly sandy CLAY			21.9	100	46	20	26		
G4 L5	GT9	0.00		B	Dark grey slightly sandy CLAY			23.0	100	48	20	28		
G5 L4	GT3	0.00		B	Dark grey slightly sandy CLAY			20.4	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
F4 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			21.5	100	47	20	27		
F5 L4	GT1	0.00		B	Dark grey slightly sandy CLAY			22.1	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L-1	GT2	0.00		B	Dark grey slightly sandy CLAY			21.5	100	48	21	27		
B1 L-1A	GT4	0.00		B	Dark grey slightly sandy CLAY			22.6	100	48	21	27		
B1 L-2	GT1	0.00		B	Dark grey slightly sandy CLAY			22.3	100	48	22	26		
E1 L5	GT5	0.00		B	Dark grey slightly sandy CLAY			23.1	100	48	22	26		
E2 L5	GT7	0.00		B	Dark grey slightly sandy CLAY			21.6	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
E3 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			22.2	99	46	22	24		
E4 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			21.8	100	47	22	25		
E5 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			21.9	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
CITY COUNCIL
CYNGOR DINAS
Casnewydd

Appendix 7 – Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Monday 13 August 2018 Heavy rain on weekend saturated site- leachate filled pond on RHS



Monday 13 August 2018 Grid B1 Leachate filled pool



Monday 13 August 2018 Grid B1 Leachate filled pool

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
Monday 13 August 2018 9:45am removal of soft material (pumping complete in Grid B1)	**13 August 2018 1350pm material laid in grid B1 for access**

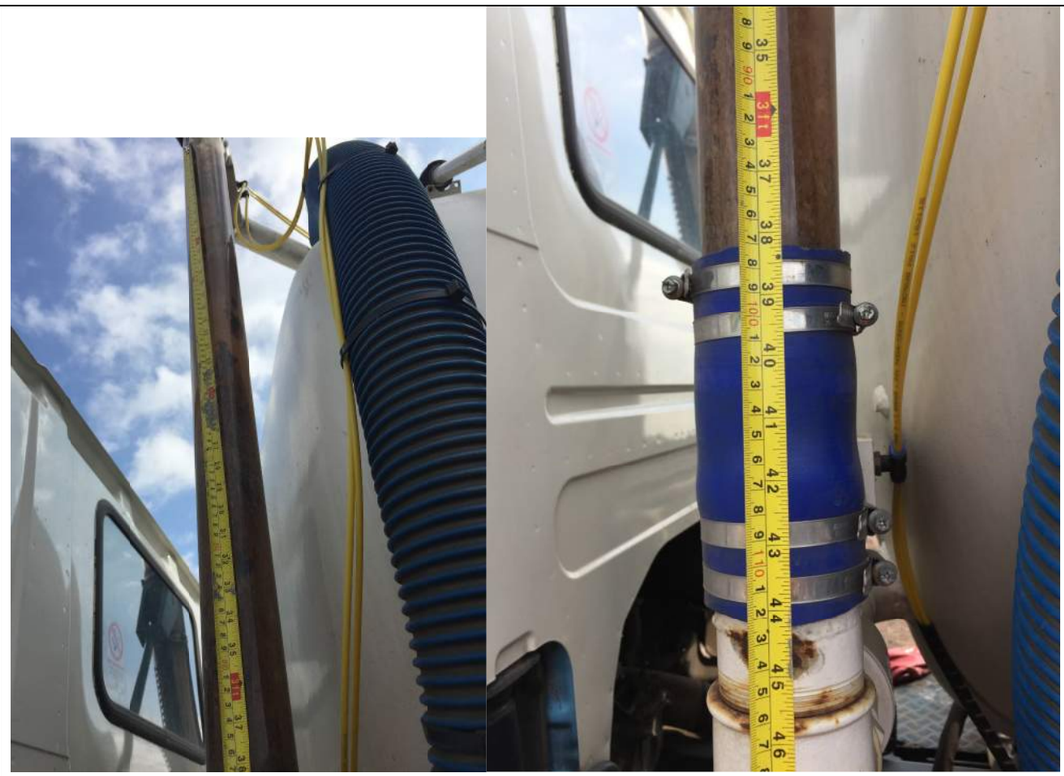
Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
13 August 2018 Pumping leachate at 1400- 1500 (@1446)	**13 August 2018 Pumping leachate at 1400- 1500 (@1507)**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
14 August pumping leachate 8am to 10:30am (@8am)	**14 August pumping leachate 8am to 10:30am (@10:13am)**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Wednesday 15 August Grid D1 to B1 cutting inspection – reduced leachate following pumping material placed in area.



Thursday 16 August 2018 Grid D1 some weathering of the cut face



Thursday 16 August 2018 Grid C1 some weathering of the cut face

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Friday 17 August 2018 Rain on Thursday Am increased leachate and surface water flow



Friday 17 August 2018 leachate flow at 8am

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 10 WE 26/08/18

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 26-08-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		26-08-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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3.6 Layer 4

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4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

1. Progression Plan
2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

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Casnewydd

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Monday rain over the weekend prevented access to the clay in the am. Tuesday was sunny. Wednesday was drizzle. Thursday rain in the am and sunny in the pm. Friday sunny

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile is generally good. Some delay with delivery of clay has been experienced, as material is being deposited closer to the stockpile it is being installed quicker and more material can be laid.

Up to the 22 August 2018, 36,173 tonnes of material was delivered to site.

The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B2L9, B3L3, B4L3, B5L5, C3L3, C4L4, C5L3

Testing by CJ Associates was not undertaken 21 August 18 due to weather and lack of clay deliveries delaying progress.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

Two 10-ton front loader, 2 excavators, dozer, roller and bowser were on site.

Some delay was experienced as rain prevented material installation on site in the am on 20 and 23 August 2018. Some delay experienced due to lack of clay deliveries on 21 and 23 August 2018.

3.3a Additional Layers
No work undertaken

3.3b Levelling the Area
No work undertaken

3.3 Layer 1

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No work undertaken

3.4 Layer 2

No work undertaken

3.5 Layer 3

B3L3, B4L3, B5L3, C3L3, C4L3, C5L3,

3.6 Layer 4

C5L4, C4L4

3.7 Layer 5

No work undertaken

3.8 Layer +6

B2L8, B2L9, D2L7

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

11 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
11 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at C2L7 on 20 August 2018.
no results have been received this week.

4.3 MC and PI,

Some details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

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4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 75KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped 23 August 2018 12:40pm to 14:45pm.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is being prioritised for completion to final level 17 August 2018 which has been substantially completed and levels checked 22 August 2018.

The Council's contractor pumped out the adjacent cell Thursday 23 August 2018. Following the removal of a tanker of leachate, there is noticeably less leachate flowing into the cell 4 site.
Some weathering of the cut face surface has been noted.

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D& MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D& MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1	L2A	L2B	L2	L3	L4	L5	L5A	L6	L7	L8	L9

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	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																													
Date																													
A2																													
Date																													
A3																													
Date																													
B1	MC&PI/D S&D/ D&MC	P Sh-125	MC&P I/DS& D/D& MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/ D&MC	P Sh-150																					
Date	T- 13/06/18	P 15/08/18	T- 14/0 6/18	P 15/08/18	T- 16/06/ 18	N/A B1L2	T- 16/06/18	P 20/08/18																					
B2	MC&PI/D &MC	P Sh-max					MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S** / D&MC And S	P Sh-max	MC&PI/**D&S** / D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120			MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96	MC&PI/ DS&D/D& MC And S	P Sh-115	MC&PI/ DS&D/D& MC And S	P Sh-122
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P03/08 /18	T 23/08/ 18	P 24/08/ 18	T 24/08/ 18	P 28/08/ 18
B3	MC&PI/D S&D/D&M C	P Sh-70					MC&PI/D S&D/D&M C	P Sh-105			MC&PI/D S&D/D&M C	P Sh-94																	
Date	T- 19/06/18	P 20/07/18 F-P1 Moistur 08/08/18 P- DS 24/08/18					T- 02/08/18	P 03/08/18			T- 22/08/18	P 23/08/18																	
B4	MC&PI/D &MC	P Sh-86					D&MC	P S-100			MC&PI/D S&D/D&M C	P Sh-75																	
Date	T- 19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T- 22/08/18	P 23/08/18																	
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2			N/A B4L3	N/A B4L3																	
Date	T- 19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2			N/A B4L3	N/A B4L3																	
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120			MC&PI/ **D&S/** D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/ D&MC	P Sh-89	MC&PI/ DS&D/D &MC	P Sh-125					
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/1 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18	T- 17/08/18	P 20/08/18					
C2	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D& DS**/ D&MC And S	Sh-106			MC&PI/ **DS&D/** D&MC And S	Sh-80	MC&PI/ **DS&D/** D&MC And S	Sh-145					
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18					
C3	MC&PI/ **D&S**/D &MC	P Sh- 128					MC&PI/ **D&S**/D &MC	P Sh- 80			MC&PI/ **D&S**/D &MC	P Sh- 150																	
Date	T- 19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T- 02/08/18	P 06/08/18			T- 21/08/18	P 23/08/18																	
C4	MC&PI/D S&D/D&M C	Sh- 115					MC&PI/D S&D/D&M C	P Sh- 124			MC&PI/ D&MC	P Sh- 100	MC&PI/ D&MC And S	P Sh-150															
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D					T- 02/08/18	P 03/08/18			T- 21/08/18	P 23/08/18	T 23/08/18	P 28/08/18															

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		14/08/18																									
C5	MC&PI/D&MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100													
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18	T 23/08/18	P 24/08/18													
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max	MC&PI/D S&D/D&MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125				
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18	T- 17/08/18	P 20/08/18				
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS/** D&MC And S	P Sh-122			MC&PI/**D&DS/** D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122				
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18				
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58																									
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18																									
D4	MC&PI/ D&MC	P Sh-120		P sh- 95																							
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18																							
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1																							
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18																							
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132				
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18	T- 14/08/18	P 16/08/18				
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110						
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18						
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78						
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18						
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120						
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18						
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120						
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18						

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F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **D&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6					
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18					T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6					
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78					
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18					
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78					
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18			T- 06/08/18	P 09/08/18					
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122					
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18					
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6					
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18					
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A F5/L5			N/A G2L6	N/A G2L6					
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6					
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135					
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18					
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125					
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18					
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90			
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 06/08/18	T- 07/08/18	P 09/08/18			
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7					
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 06/08/18			T- 07/08/18	P 09/08/18					

Streetscene
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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit	
D&S -	Particle Density & Particle Distribution 1/500m3		(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record	
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)	
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)	

Permeability

Grid Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		
D2-L4		27/06/18		
F3-L1		04/07/18		
F4-L2		05/07/18		
D4L-9		10/07/18		
E5-L2		12/07/18		
E3-L3		18/07/18		
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		
C2-L7		20/08/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability Tests

Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1349**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C2-L7-C1	Core 2 D2-L7-C1			
Bulk Density	2.06	2.08			
Moisture Content	21	21			
Dry Density	1.70	1.72			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	1.9	1.7			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 21/08/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1368**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C5-L3-C1	Core 2 C4-L3-C1	Core 3 C3-L3-C1	Core 4 B4-L3-C1	Core 5 B3-L3-C1
Bulk Density	2.05	1.96	2.07	2.03	2.02
Moisture Content	22	25	21	21	21
Dry Density	1.69	1.57	1.72	1.67	1.67

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.9	3.9	1.8	3.2	4.4

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 23/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1389**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**23/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-L8-C1	Core 2 C5-L4-C1			
Bulk Density	2.06	2.06			
Moisture Content	21	21			
Dry Density	1.70	1.71			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.2	2.2			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 24/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1396**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**24/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L4-C1	Core 2 B2-L9-C1			
Bulk Density	2.05	2.02			
Moisture Content	20	21			
Dry Density	1.71	1.67			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	3.0	3.6			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee — R Anstee, Materials and Field Testing Director	Date 25/08/2018	Fig

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
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Appendix 4 – Field Logs

Available on request

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1350	C2-L7 20.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	145	
1351	C2-L7 20.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1352	C2-L7 20.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1353	D2-L7 20.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1354	D2-L7 20.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	120	
1355	D2-L7 20.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	140	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	21/08/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1369	C5-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1370	C5-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	110	
1371	C5-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1372	C4-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
1373	C4-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	110	
1374	C4-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	
1375	C3-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1376	C3-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1377	C3-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1378	B4-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	75	
1379	B4-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1380	B4-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	108	
1381	B3-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	94	
1382	B3-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1383	B3-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1390	B2-L8 23.08.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1391	B2-L8 23.08.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	135	
1392	B2-L8 23.08.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	115	
1393	C5-L4 23.08.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
1394	C5-L4 23.08.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1395	C5-L4 23.08.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	24/08/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1397	C4-L4 24.08.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1398	C4-L4 24.08.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1399	C4-L4 24.08.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1400	B2-L9 24.08.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	122	
1401	B2-L9 24.08.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1402	B2-L9 24.08.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	25/08/2018	

Streetscene
Y-Strydynun

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Newport/Casnewydd
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Appendix 6 – PI, PL, MC, LL Results

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D3L1	B	Dark grey clayey SILT with rare fossil fragments.	2.70	2
GT4		G2L4	B	Dark grey CLAY and SILT with rare fossil fragments.	2.73	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

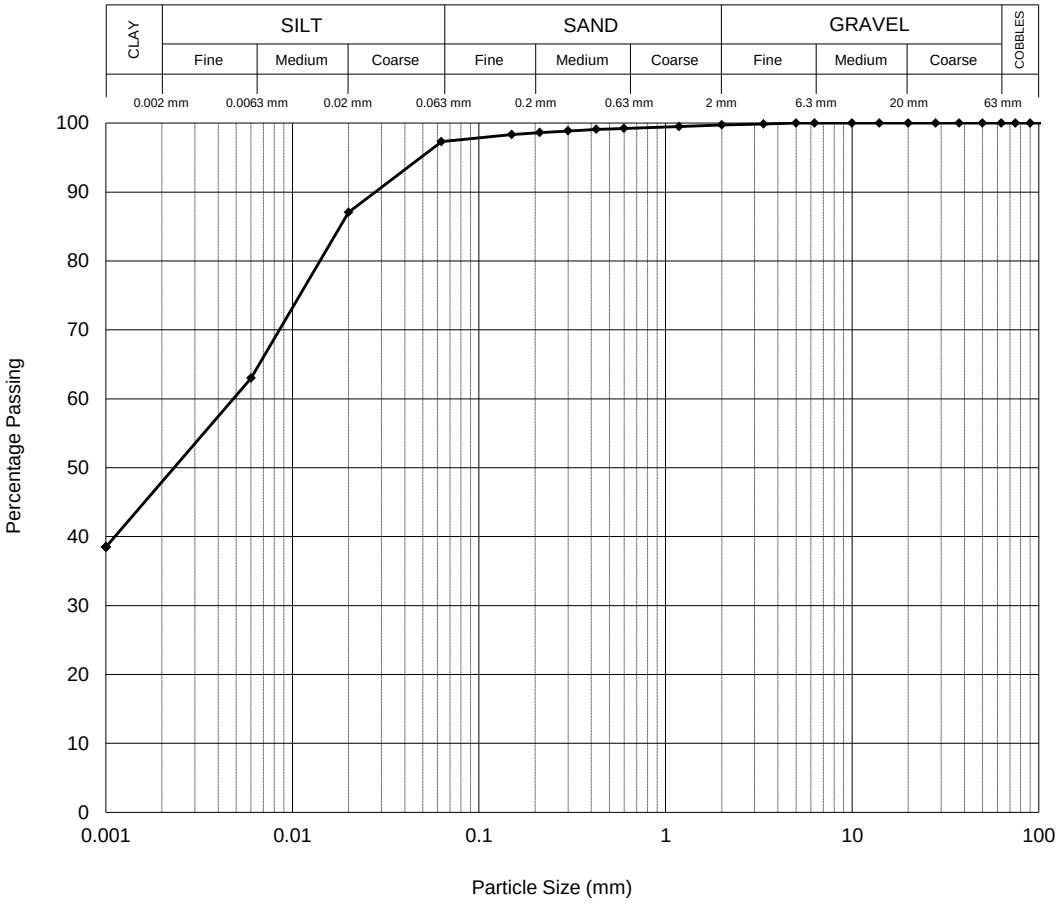
BH / TP No.	GT2
Sample Ref	D3L1
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	63
1 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

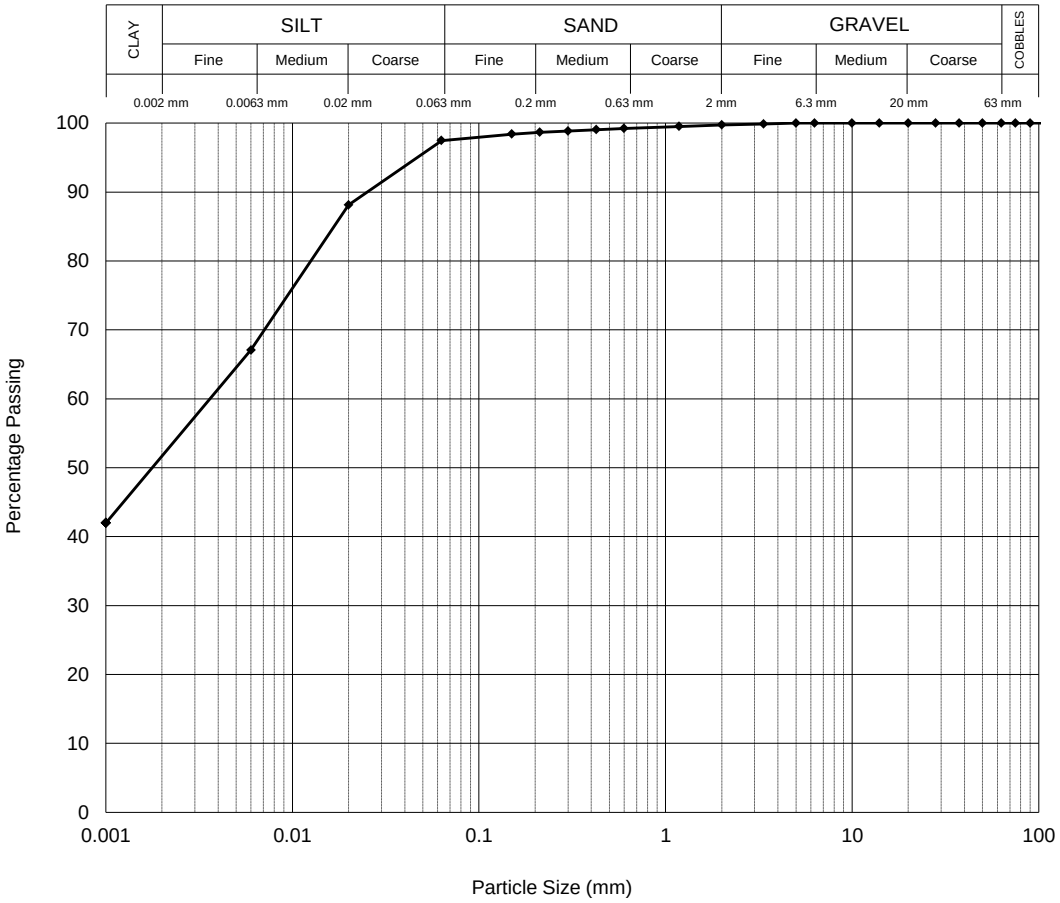
BH / TP No.	GT4
Sample Ref	G2L4
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	67
1 µm	42
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	50
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1962

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		F5-L3	B	Dark grey clayey SILT with rare fossil fragments.	2.67	2
GT6		F4-L4	B	Dark grey CLAY and SILT with rare fossil fragments.	2.67	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

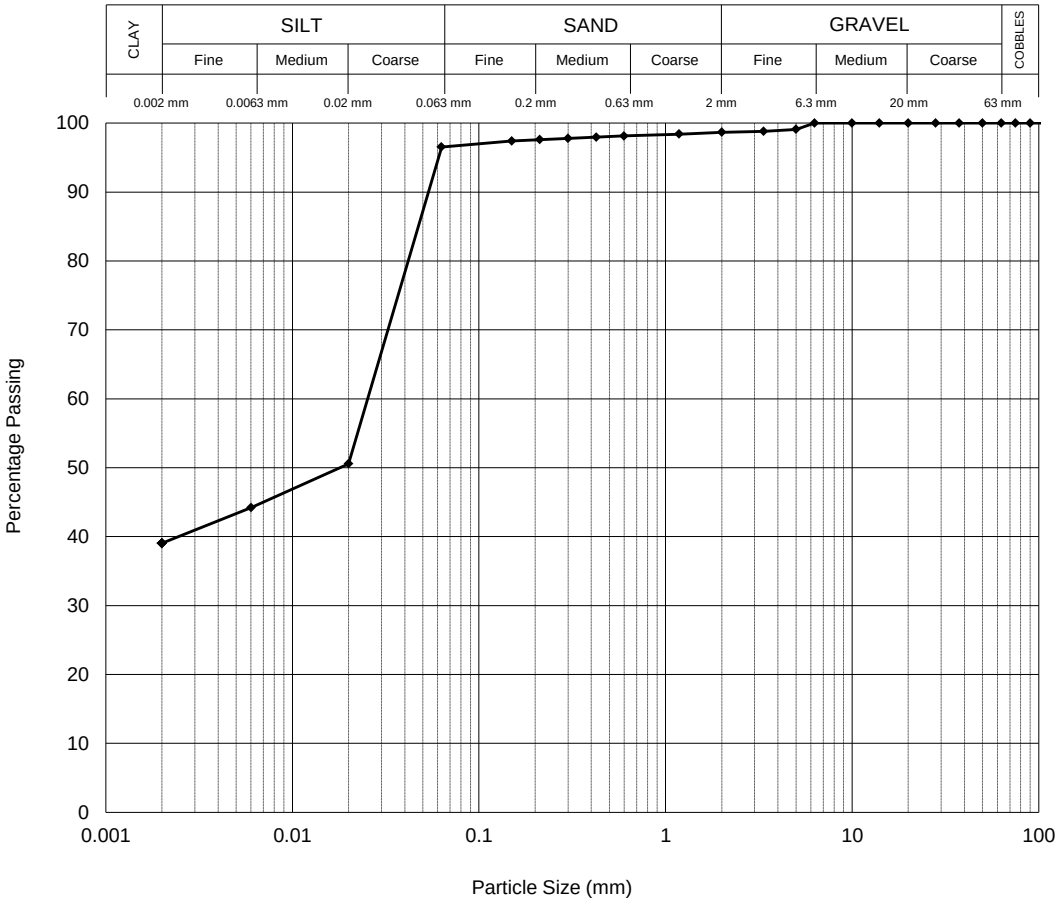
BH / TP No.	GT2
Sample Ref	F5-L3
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	51
6 µm	44
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	58
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

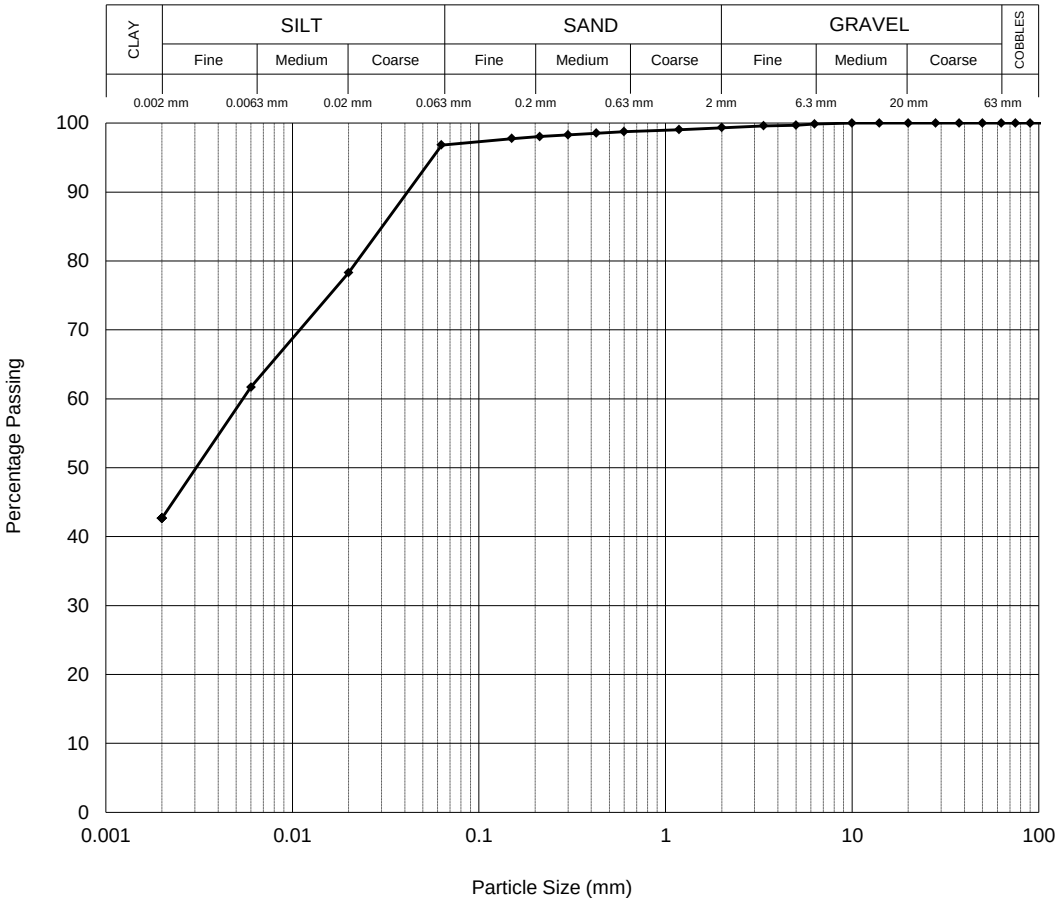
BH / TP No.	GT6
Sample Ref	F4-L4
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	62
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	54
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13111

Number of samples submitted for testing:	7	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	19	Jul-18
Date of receipt of testing instructions	19	Jul-18
Date testing started:	20	Jul-18
Date of issue:	23	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.: AG0390

Project Name: Docksway Cell 4

Hole No.	Sample Ref	Sample Top	Sample Base	Sample Type	Soil Description	Density bulk Mg/m3	Density dry Mg/m3	w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
B3 L1	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			27.5	100	47	21	26		
B4 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.6	100	50	22	28		
B5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	21	31		
C3 L1	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.6	88	49	22	27		
C5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
BGT7		C3L1	B	Dark grey CLAY and SILT with rare fossil fragments.	2.68	2
GT5		B3L1	B	Dark grey CLAY and SILT with rare fossil fragments.	2.66	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27842

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

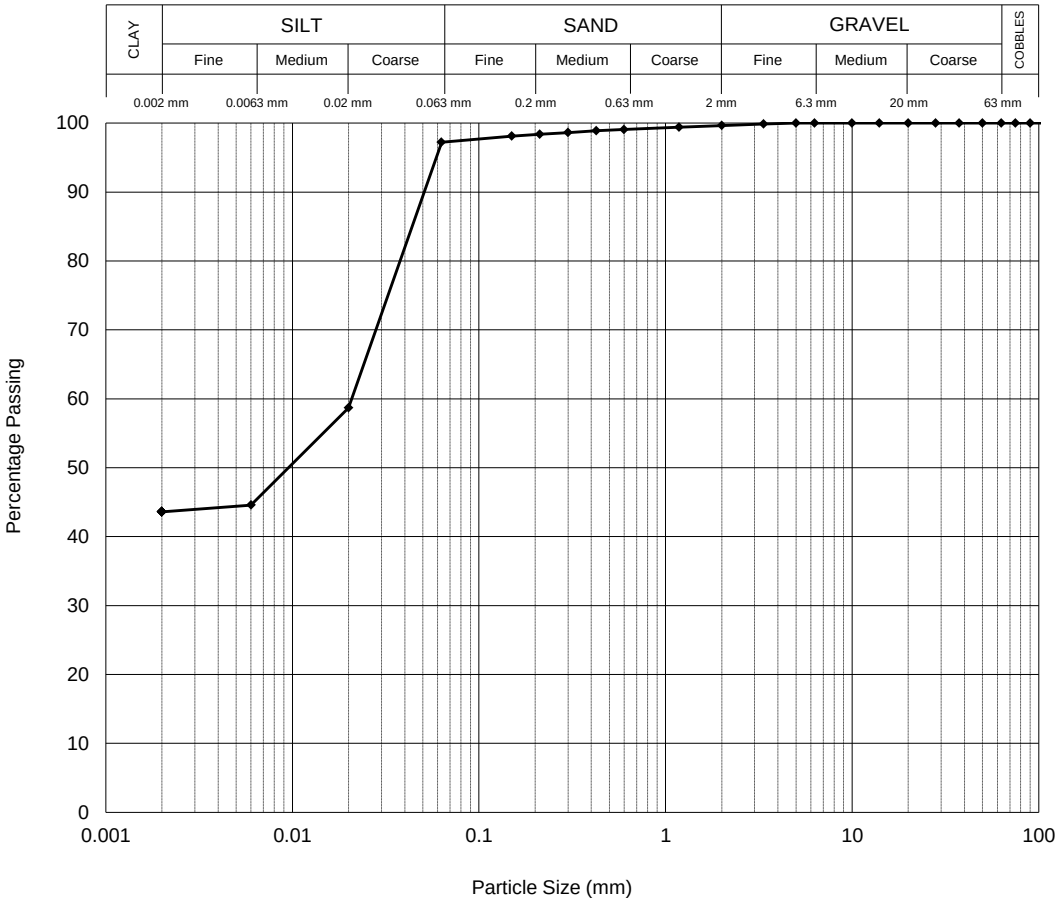
BH / TP No.	BGT7
Sample Ref	C3L1
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	59
6 µm	45
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27842

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

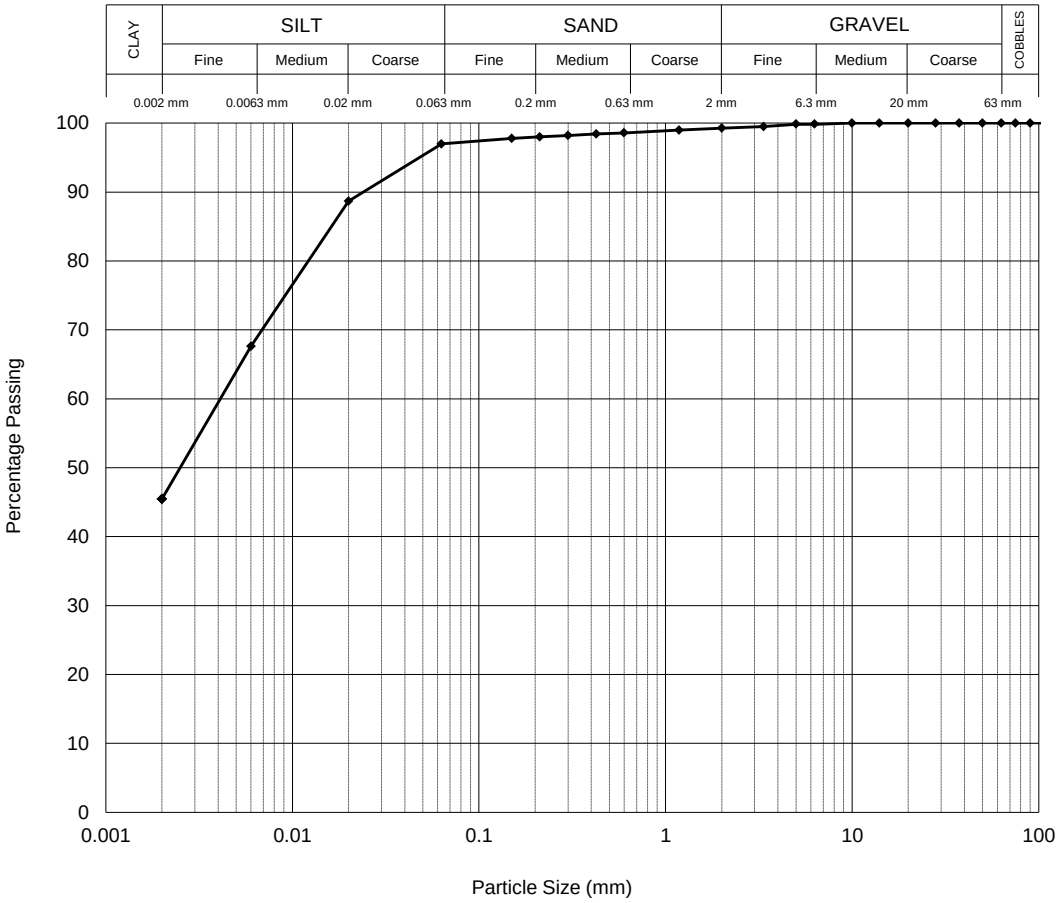
BH / TP No.	GT5
Sample Ref	B3L1
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	68
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	52
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27842

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13121

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	23	Jul-18
Date of receipt of testing instructions	23	Jul-18
Date testing started:	24	Jul-18
Date of issue:	23	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.0	100	51	22	29		
F3 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	48	21	27		
G4 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.3	100	48	22	26		
G5 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.0	99	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
G2		G4-L4	B	Dark grey very clayey SILT with rare fossil fragments.	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27839

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

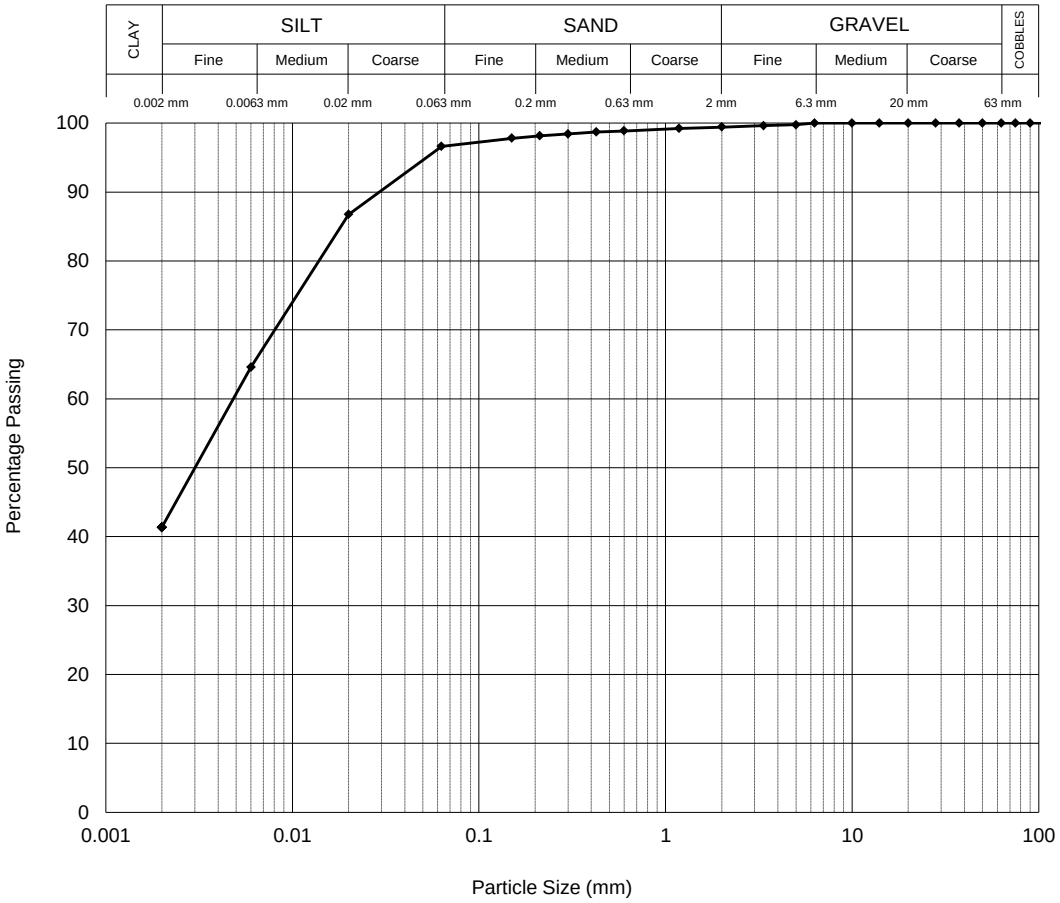
BH / TP No.	G2
Sample Ref	G4-L4
Sample Type	B

Description

Dark grey very clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27839

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13140

Number of samples submitted for testing:	3	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	27	Jul-18
Date of receipt of testing instructions	27	Jul-18
Date testing started:	30	Jul-18
Date of issue:	23	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

1429

Approved by :

Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
F4 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			21.5	100	47	20	27		
F5 L4	GT1	0.00		B	Dark grey slightly sandy CLAY			22.1	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

1128 - Particle Density Summary - 27865.XLSM

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F4L5	B	Dark grey CLAY and SILT	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27865

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

GL:Version 1.00 - 30/12/1899

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

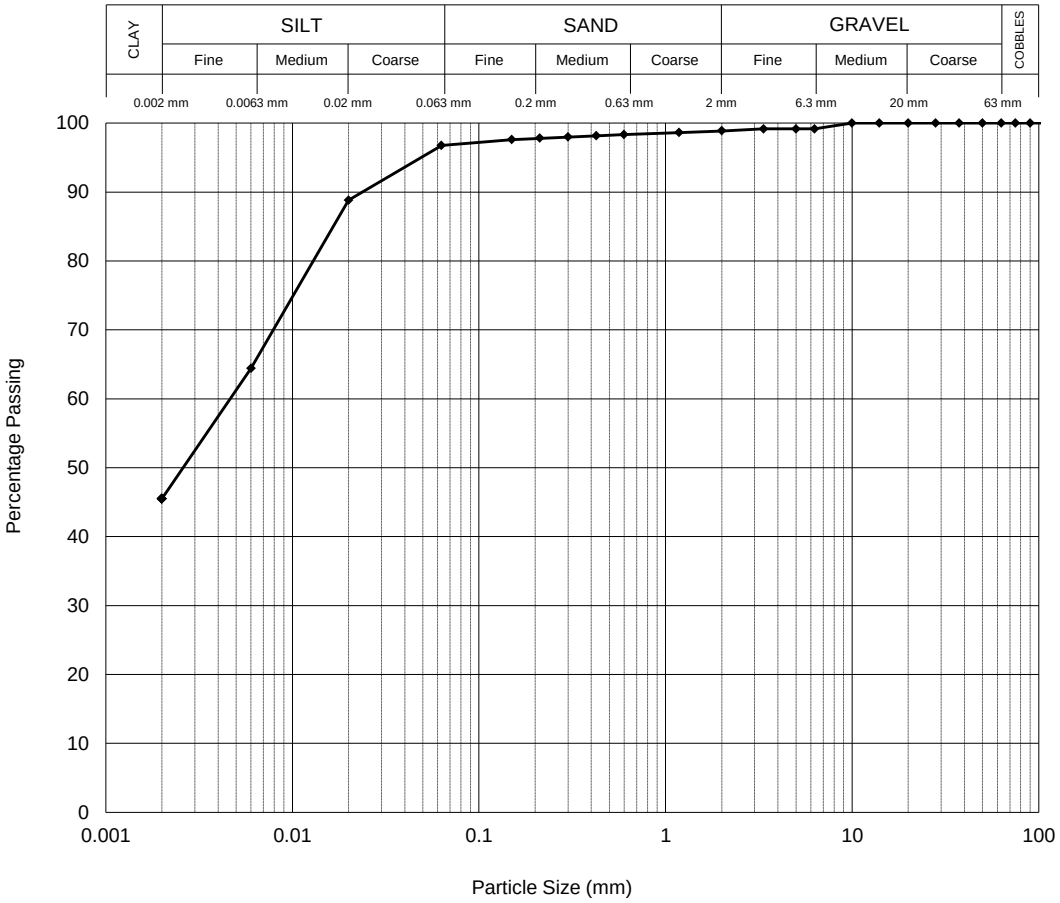
BH / TP No.	GT3
Sample Ref	F4L5
Sample Type	B

Description

Dark grey CLAY and SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	64
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	51
Clay	46

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27865

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 7 – Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Monday 20 August 2018 rain on weekend



Monday 20 August 2018 Grid C1 leachate flow



Monday 20 August 2018 Grid D1 leachate flow

Streetscene
Y-Strydynun

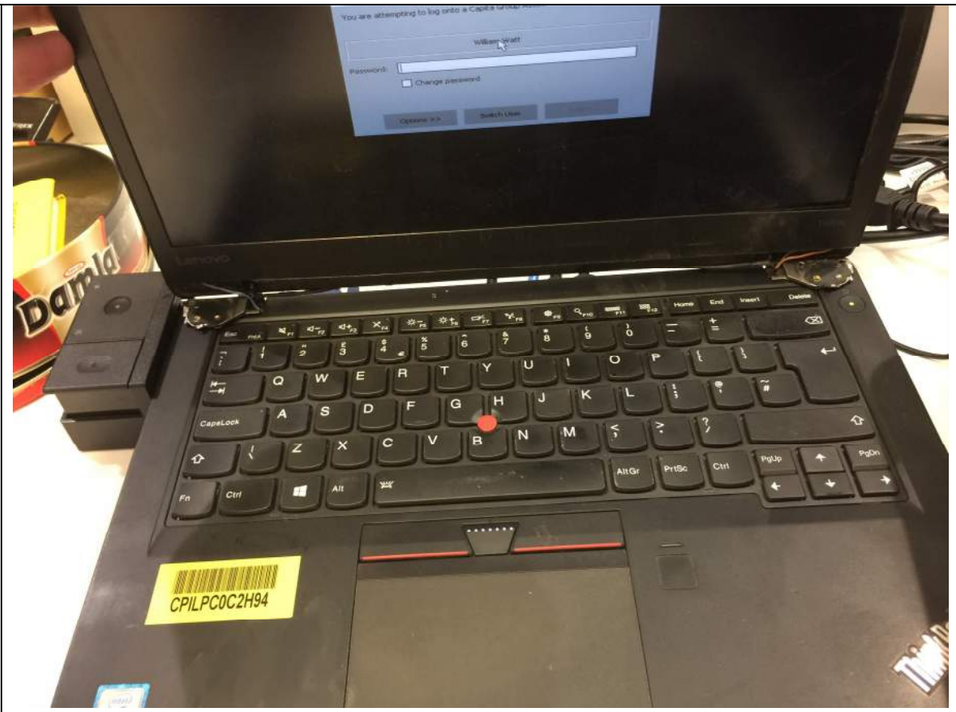
Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Monday 20 August 2018 rain and leachate flow on site- excavation of piezometer trench waiting for clay to dry.

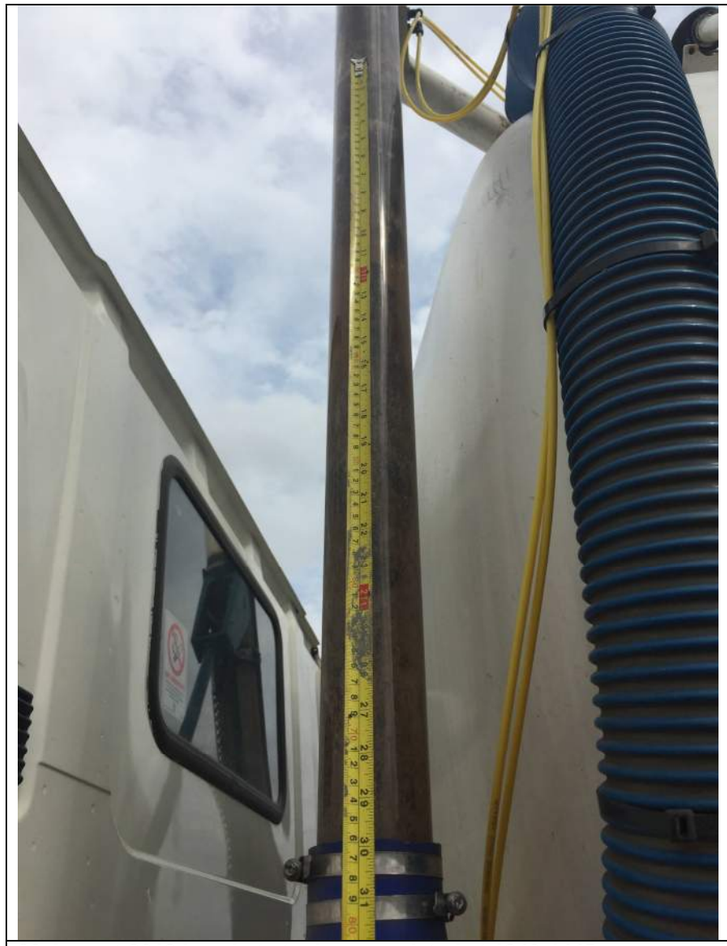
Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
Monday 20 August 2018 bench between D2 and E2 – to confirm clay profile **1. Shallow fall into D2 away from sump or 2. Relocate cross drain to interface.**	**Wednesday 22 August 2018 – IT issues Laptop broken**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
23 August 2018 Leachate tanker completed at 1240-1445	**24 August 2018 Leachate trench and sump formed at C1**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 11 WE 02/09/18

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 02-09-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		02-09-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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3.4 Layer 2
3.5 Layer 3
3.6 Layer 4

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4.1 Core Cutter Samples
4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

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5.2 Permeability

6.0 Problems encountered

Appendix

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2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

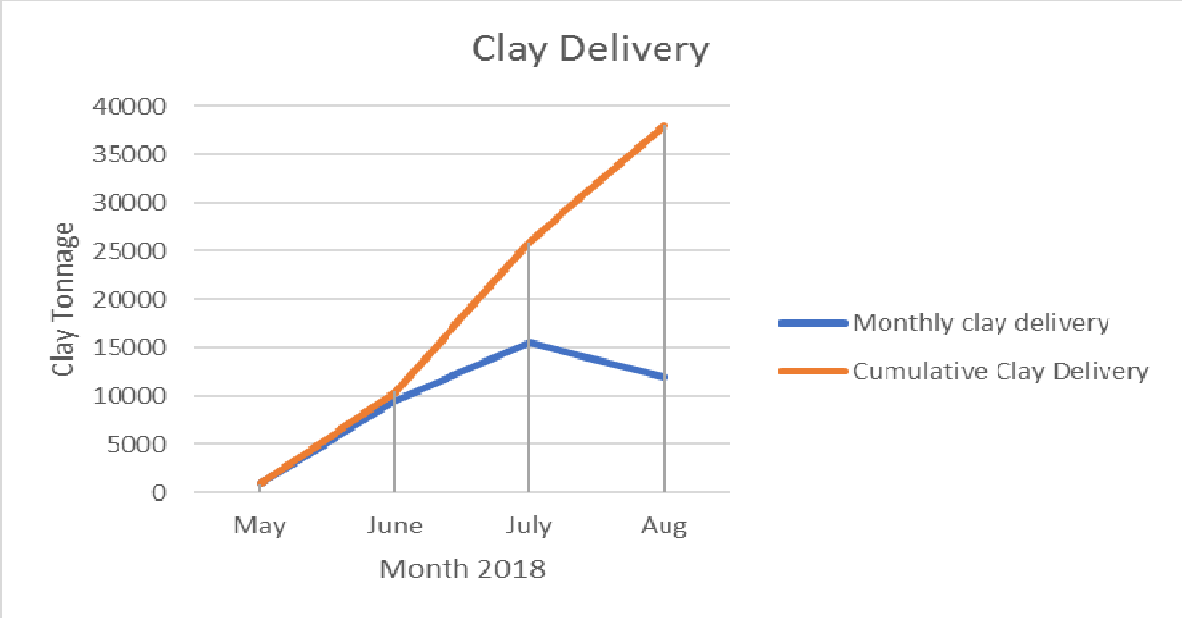
2.0 Weather

Monday Bank holiday
Tuesday rain in Am and standing water from rain over weekend
Wednesday Rain in am dry in pm
Thursday Dry
Friday sunny

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile is generally good. Some delay with delivery of clay has been experienced, as material is being deposited closer to the stockpile it is being installed quicker and more material can be laid.



Up to the 29 August 2018, 37,998 tonnes of material was delivered to site.
The working hours this week were 730am to 1600pm, with no work on Bank holiday Monday.

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3.2 Work Progress

Work was undertaken to the level C2L8 an D5L2

Testing by CJ Associates was not undertaken Tuesday 28 August 18 and Thursday 30 August 18 due to weather and lack of clay deliveries delaying progress.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

Two 10-ton front loader, 2 excavators, dozer, roller and bowser were on site.

Some delay was experienced as rain prevented material installation on site in the am on 28 August 2018. Some delay of 1-3hours per day was experienced due to lack of clay deliveries everyday this week.

3.3a Additional Layers
No work undertaken
3.3b Levelling the Area
No work undertaken
3.3 Layer 1
No work undertaken
3.4 Layer 2
D4L2, D5L2
3.5 Layer 3
No work undertaken
3.6 Layer 4
C3L4
3.7 Layer 5
No work undertaken
3.8 Layer +6
C2L8
4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

3 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
3 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at C3L4 on 30 August 2018.
Four results have been received this week.

4.3 MC and PI,

Some details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Some details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 88KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped 28 August 2018 9am to 12:00pm.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor pumped out the adjacent cell Wednesday 28 August 2018, following the removal of a tanker of leachate, there is noticeably less leachate flowing into the cell 4 site.
Some weathering of the cut face surface has been noted.

Streetscene
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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D& MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D& MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1	L2A	L2B	L2	L3	L4	L5	L5A	L6	L7	L8	L9

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	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																													
Date																													
A2																													
Date																													
A3																													
Date																													
B1	MC&PI/DS&D/D&MC	P Sh-125	MC&PI/DS&D/D&MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/D&MC	P Sh-150																					
Date	T-13/06/18	P 15/08/18	T-14/06/18	P 15/08/18 P-DS&D 31/08/18	T-16/06/18	N/A B1L2	T-16/06/18	P 20/08/18																					
B2	MC&PI/D&MC	P Sh-max					MC&PI/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&S**/D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/D&MC And S	Sh-120			MC&PI/D&MC And S	Sh-100	MC&PI/D&MC And S	P Sh-96	MC&PI/DS&D/D&MC And S	P Sh-115	MC&PI/DS&D/D&MC And S	P Sh-122
Date	T-19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P-28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P03/08/18	T 23/08/18	P 24/08/18	T 24/08/18	P 28/08/18
B3	MC&PI/DS&D/D&MC	P Sh-70					MC&PI/DS&D/D&MC	P Sh-105			MC&PI/DS&D/D&MC	P Sh-94																	
Date	T-19/06/18	P 20/07/18 F-PI Moistur 08/08/18 P- DS 24/08/18					T-02/08/18	P 03/08/18			T-22/08/18	P 23/08/18																	
B4	MC&PI/D&MC	P Sh-86					D&MC	P S-100			MC&PI/DS&D/D&MC	P Sh-75																	
Date	T-19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T-22/08/18	P 23/08/18																	
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2			N/A B4L3	N/A B4L3																	
Date	T-19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2			N/A B4L3	N/A B4L3																	
C1	MC&PI/**D&S**/D&MC	P Sh-125	MC&PI/D&MC and S	P Sh-120			MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh-106			MC&PI/D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/D&MC	P Sh-89	MC&PI/DS&D/D&MC	P Sh-125					
Date	T-20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T-29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T-15/08/18	P 16/08/18	T-17/08/18	P 20/08/18					
C2	MC&PI/**D&S**/D&MC	P Sh-max					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh -122			MC&PI/**D&DS**/ D&MC And S	Sh-106			MC&PI/**DS&D**/D&MC And S	Sh-80	MC&PI/**DS&D**/D&MC And S	Sh-145	MC&PI/D&MC	P-116		
Date	T-19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P-28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18	T-28/07/18	P-29/0818		
C3	MC&PI/**D&S**/D&MC	P Sh- 128					MC&PI/**D&S**/D&MC	P Sh- 80			MC&PI/**D&S**/D&MC	P Sh- 150	MC&PI/**D&S**/D&MC	P Sh- 88															
Date	T-19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T-02/08/18	P 06/08/18			T-21/08/18	P 23/08/18	T-30/08/18	P 03/09/18															
C4	MC&PI/DS&D/D&MC	Sh- 115					MC&PI/DS&D/D&MC	P Sh- 124			MC&PI/D&MC	P Sh- 100	MC&PI/D&MC And S	P Sh-150															
Date	T-18/07/18	P 20/07/18 P-PI					T-02/08/18	P 03/08/18			T-21/08/18	P 23/08/18	T 23/08/18	P 28/08/18															

Streetscene
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		08/08/18 P-DS&D 14/08/18																									
C5	MC&PI/D&MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100													
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18	T 23/08/18	P 24/08/18													
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max	MC&PI/D S&D/D& MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125				
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18	T- 17/08/18	P 20/08/18				
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/**D&DS**/ D&MC And S	Sh-108			MC&PI/ **DS&D**/ D&MC And S	Sh-90	MC&PI/ **DS&D**/ D&MC And S	Sh-122				
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18				
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58																									
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18																									
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S** /D&MC And S																				
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	Needs Core																			
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142																			
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818																			
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132				
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18	T- 14/08/18	P 16/08/18				
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110						
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18						
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78						
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18						
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120						
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18						
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120						
Date	T- 09/07/18	P 11/07/18 P-PI					T- 12/07/18	P- 13/07/18 P-PI			T- 18/07/18	P 19/07/18 P-PI	T- 25/07/18	P 26/07/18 P-PI			T- 01/08/18	P 02/08/18 P-PI			T- 09/08/18	P-10/08/18						

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Casnewydd

		08/08/18						08/08/18				08/08/18 P-DS&D 14/08/18		08/08/18 P-DS&D 31/08/18				15/08/18 P-DS&D 31/08/18									
F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **DS&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6						
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18					T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18 P- DS&DS 31/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6						
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78						
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18						
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78						
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18			T- 06/08/18	P 09/08/18						
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122						
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18						
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6						
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18						
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6						
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6						
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135						
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18						
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125						
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18						
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90				
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 06/08/18	T- 07/08/18	P 09/08/18				
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7						
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 06/08/18			T- 07/08/18	P 09/08/18						

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Grid Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		P 31/08/18
D2-L4		27/06/18		P 31/08/18
F3-L1		04/07/18		P 31/08/18
F4-L2		05/07/18		
D4L-9		10/07/18		
E5-L2		12/07/18		
E3-L3		18/07/18		P 31/08/18
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		
C2-L7		20/08/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability Tests

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	B2-L3
Sample Type:	C

Description:
Stiff fissured dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.68	99.41
Height	*mm*	100.86	100.59
Moisture Content	*%*	20	24
Bulk Density	*Mg/m³*	2.06	2.13
Dry Density	*Mg/m³*	1.71	1.72

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.26	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	6.3

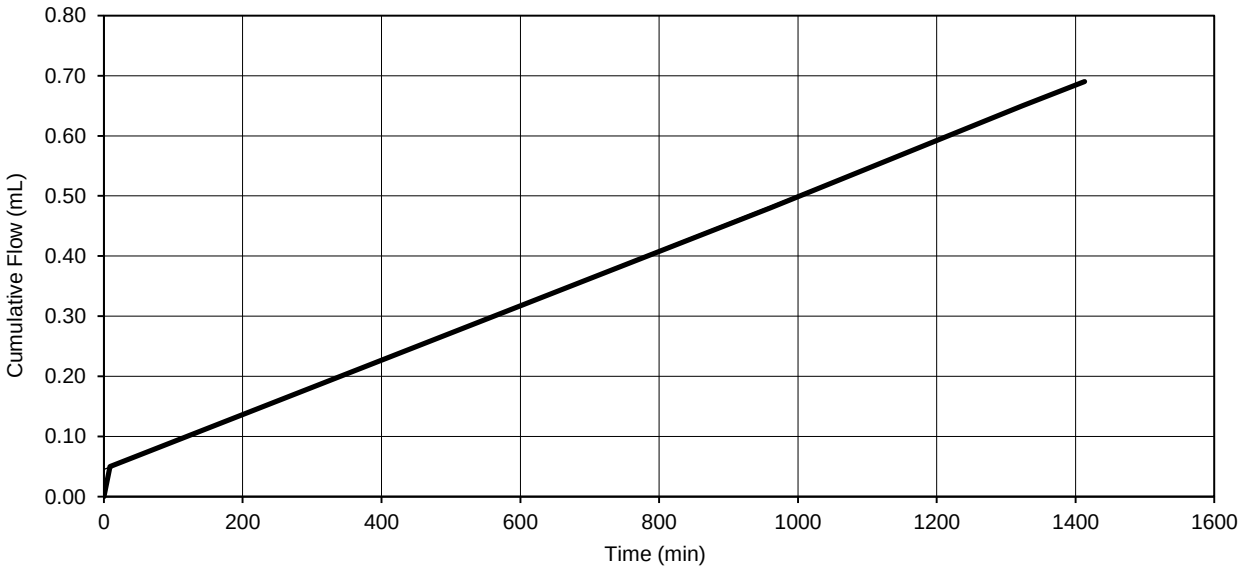
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	5
Consolidation	*days*	3
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 9.7×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:
GEO / 27698

Project Name:
DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	D2-L4
Sample Type:	C

Description:
Firm dark grey CLAY with rare fine to medium gravel. Gravel is weakly cemented mudstone.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.21	100.67
Height	*mm*	130.42	129.73
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.03	2.10
Dry Density	*Mg/m³*	1.66	1.68

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.22	0.99

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	16.8

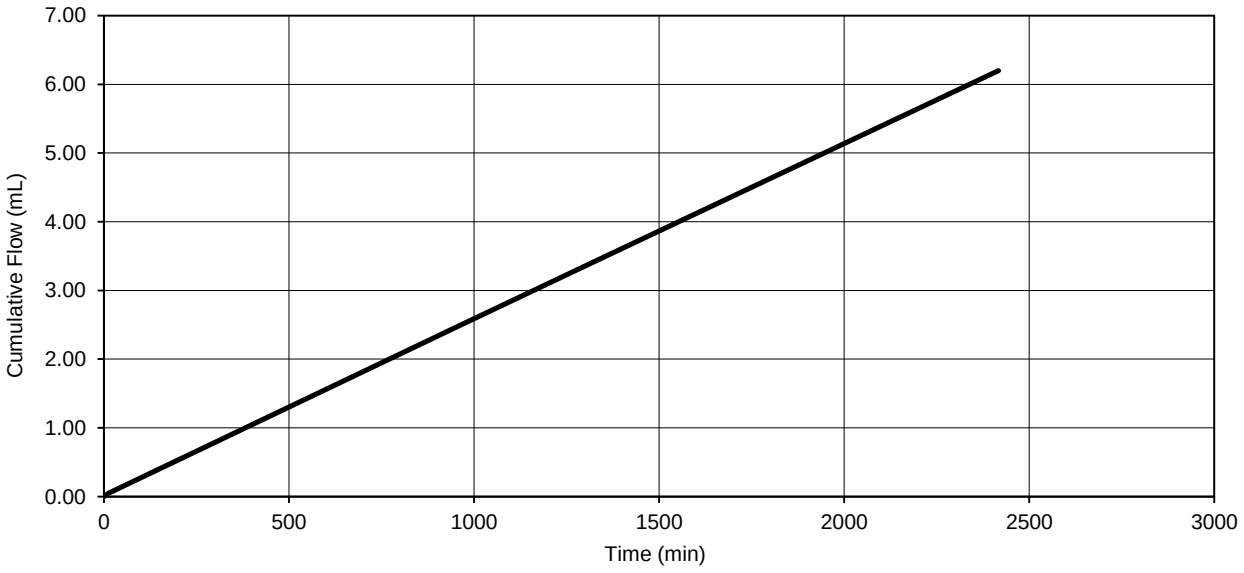
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		7.9
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	6
Consolidation	*days*	4
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 6.8×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	F3L1
Sample Type:	C

Description:
Stiff dark grey slightly gravelly CLAY. Gravel is fine to medium weakly cemented mudstone.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.12	100.57
Height	*mm*	100.11	99.56
Moisture Content	*%*	21	25
Bulk Density	*Mg/m³*	2.02	2.13
Dry Density	*Mg/m³*	1.67	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.43	0.96

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	13.3

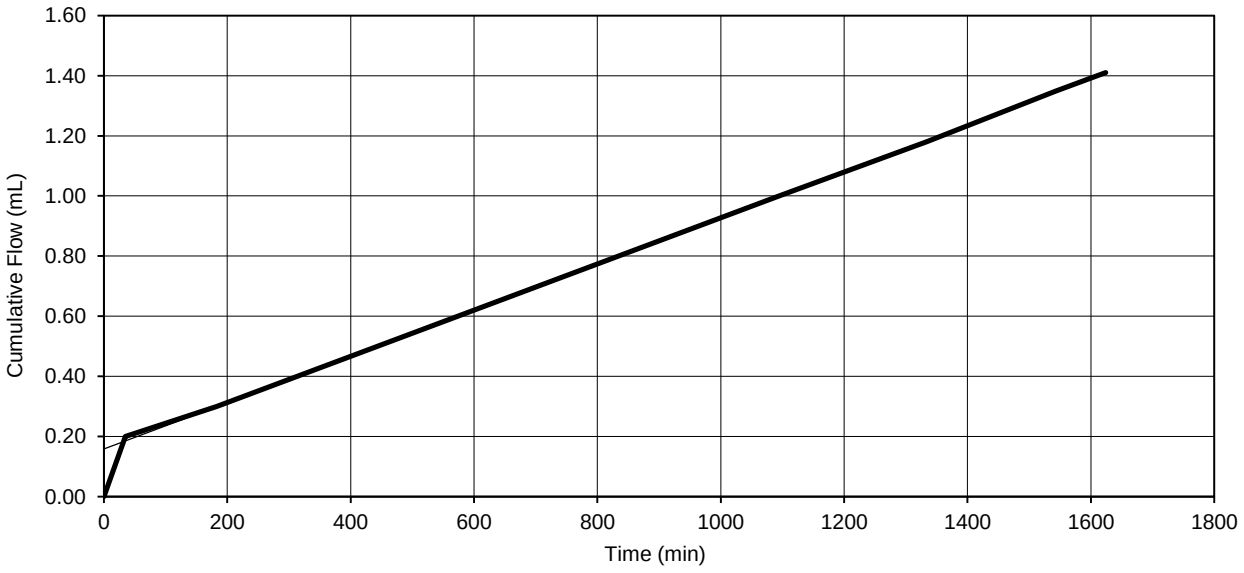
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	6
Consolidation	*days*	3
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 1.6×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E3L3
Sample Type:	C

Description:
Firm dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	100.69	100.40
Height	*mm*	99.87	99.57
Moisture Content	*%*	24	26
Bulk Density	*Mg/m³*	2.00	2.05
Dry Density	*Mg/m³*	1.62	1.63

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.37	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	7.0

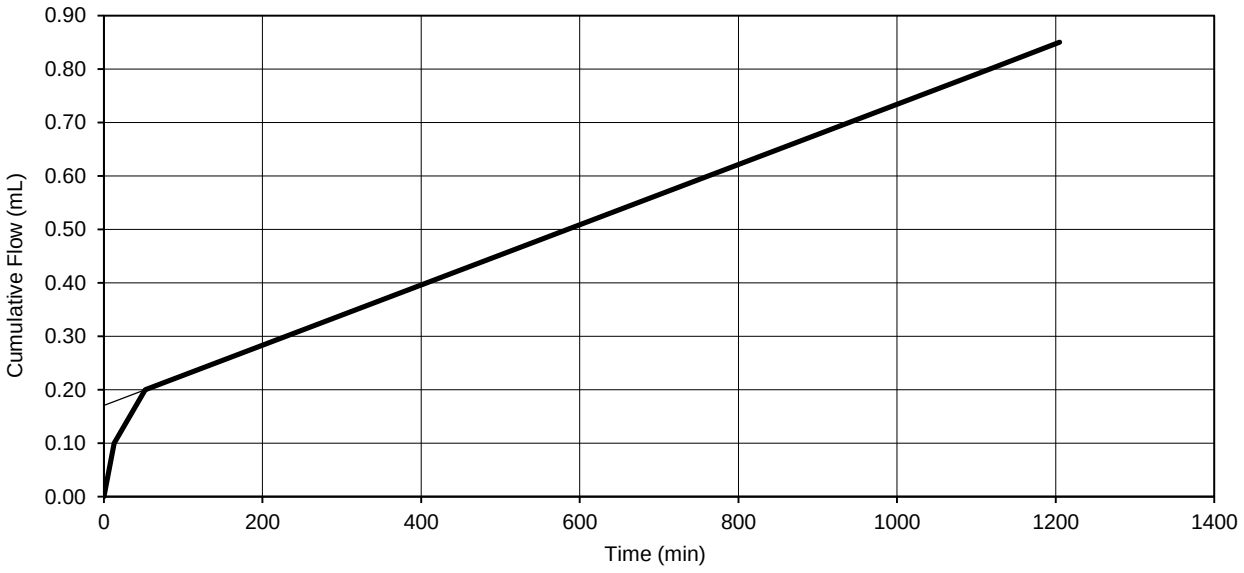
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.2×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1440**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**29/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D5-L2-C1	Core 2 C2-L8-C1			
Bulk Density	2.09	2.04			
Moisture Content	19	21			
Dry Density	1.76	1.69			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.1	3.1			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 30/08/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1467**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**31/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L4-C1				
Bulk Density	2.06				
Moisture Content	20				
Dry Density	1.72				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	3.1				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 02/09/2018	Fig

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 4 – Field Logs

Available on request

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1441	D5-L2 29.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	142	
1442	D5-L2 29.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1443	D5-L2 29.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1444	C2-L8 29.08.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	116	
1445	C2-L8 29.08.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1446	C2-L8 29.08.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver R. Anstee	Date 30/08/2018	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1468	C3-L4 31.08.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	102	
1469	C3-L4 31.08.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	88	
1470	C3-L4 31.08.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	92	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	02/09/2018	

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Casnewydd

Appendix 6 – PI, PL, MC, LL Results

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E3L5	B	Dark grey silty CLAY	2.68	2
GT5		E5L5	B	Dark grey silty CLAY	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

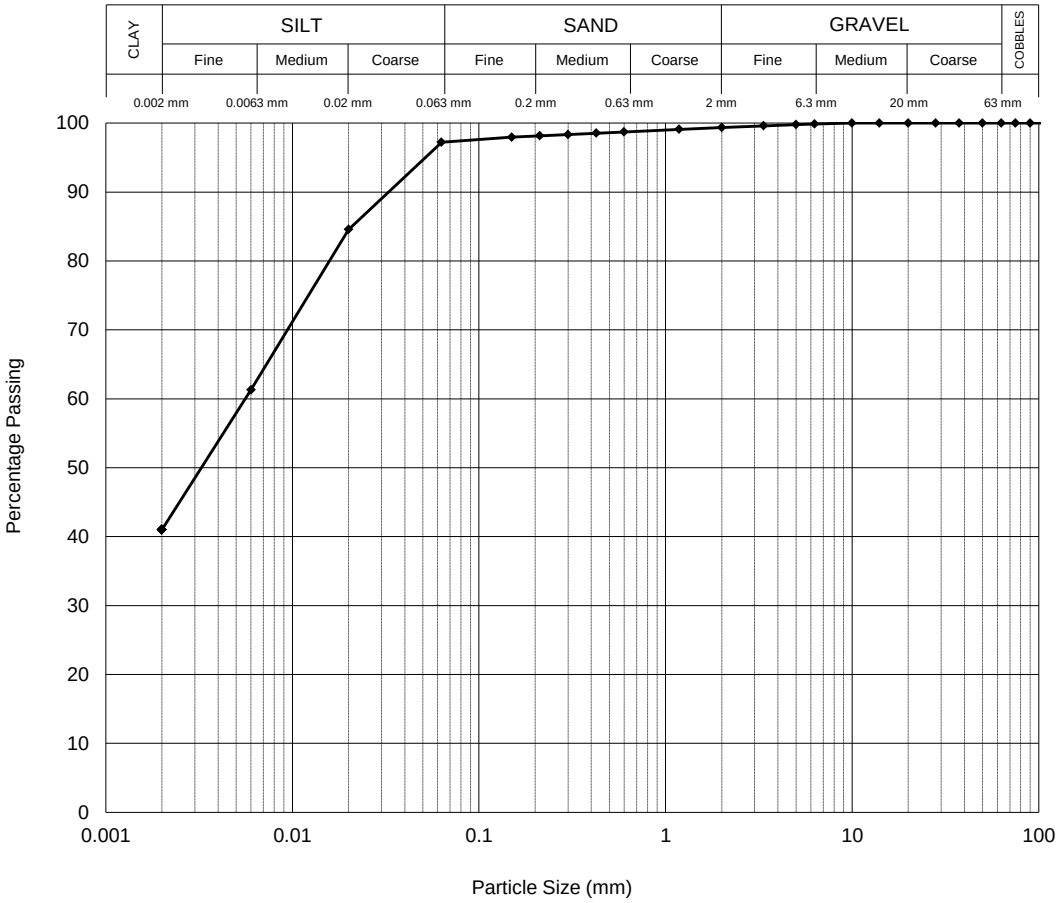
BH / TP No.	GT1
Sample Ref	E3L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

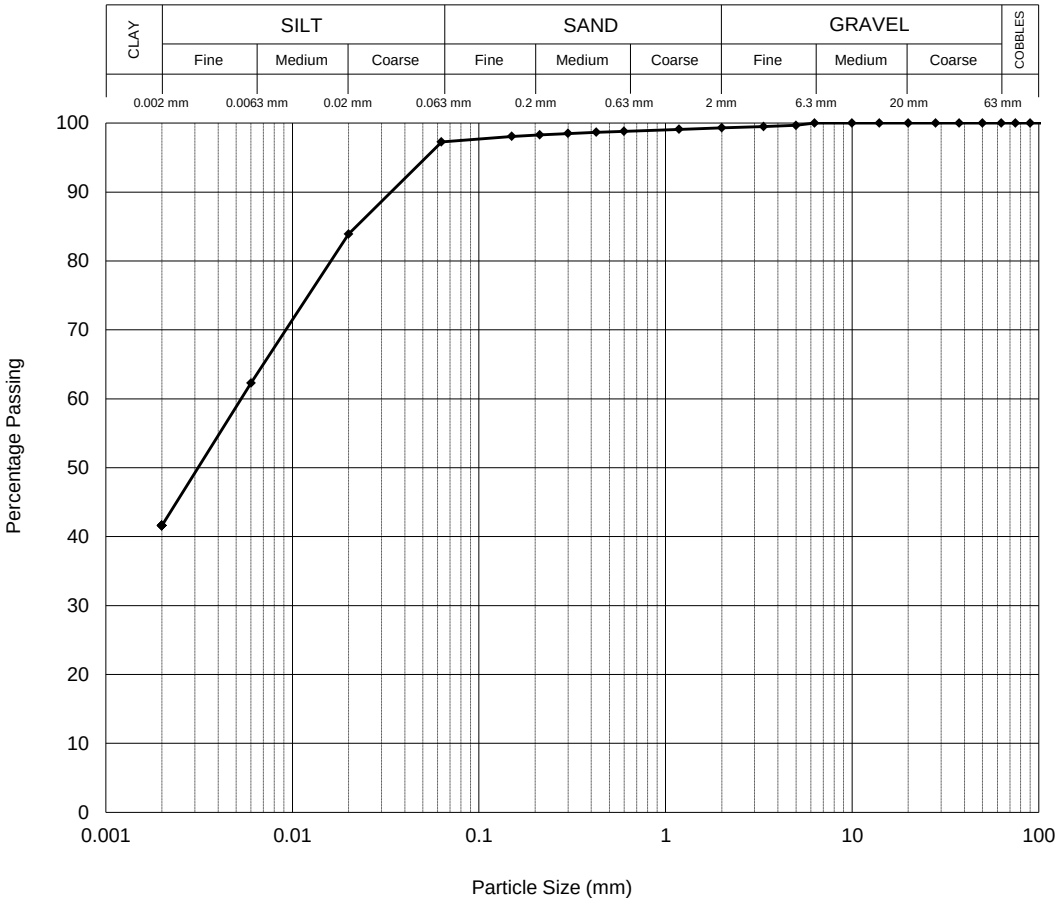
BH / TP No.	GT5
Sample Ref	E5L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	62
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
B2 L3	4	0.00		B	Dark grey slightly sandy silty CLAY			20.0	100	47	21	26		
C1 L2	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	22	25		
C4 L-2	1	0.00		B	Dark grey slightly sandy silty CLAY			19.2	100	47	21	26		
D1 L2	2	0.00		B	Dark grey slightly sandy silty CLAY			23.2	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		C1-L2			B	Dark grey silty CLAY	2.73	2
GT5		B2-L3			B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

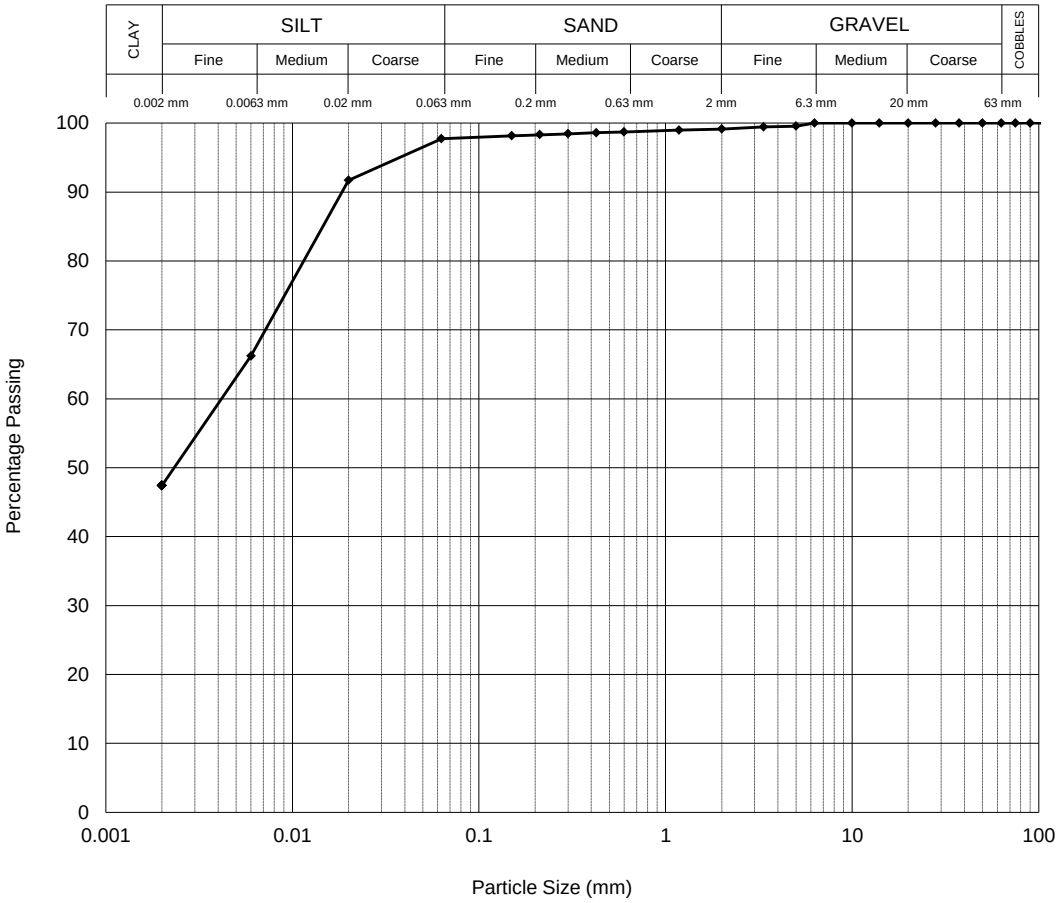
BH / TP No.	GT3
Sample Ref	C1-L2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	92
6 µm	66
2 µm	47

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	50
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

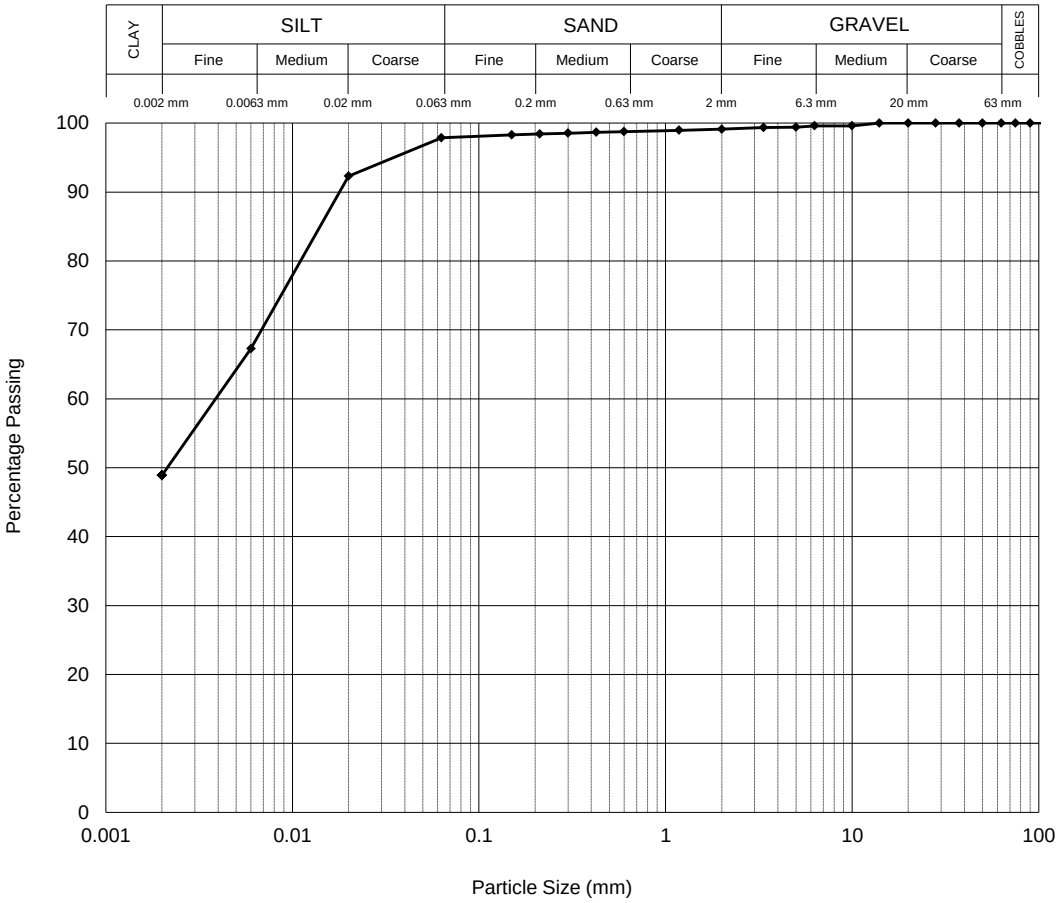
BH / TP No.	GT5
Sample Ref	B2-L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	92
6 µm	67
2 µm	49

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	49
Clay	49

Checked and Approved by

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
C2 L4	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	20	27		
D1 L4	4	0.00		B	Dark grey slightly sandy silty CLAY			20.6	100	48	20	28		
D2 L4	1	0.00		B	Dark grey slightly sandy silty CLAY			20.5	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D2-L4			B	Dark grey silty CLAY	2.69	2
GT5		D1-L4			B	Dark grey silty CLAY.	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

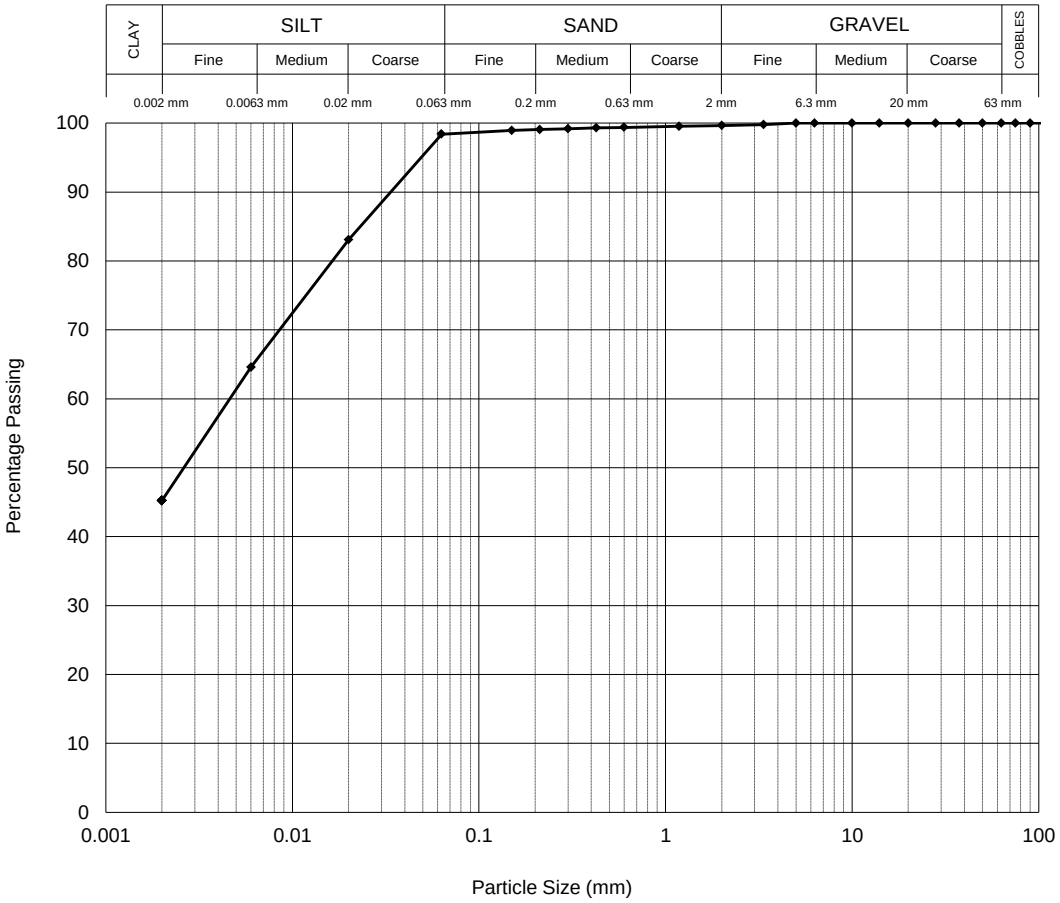
BH / TP No.	GT2
Sample Ref	D2-L4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	65
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	53
Clay	46

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

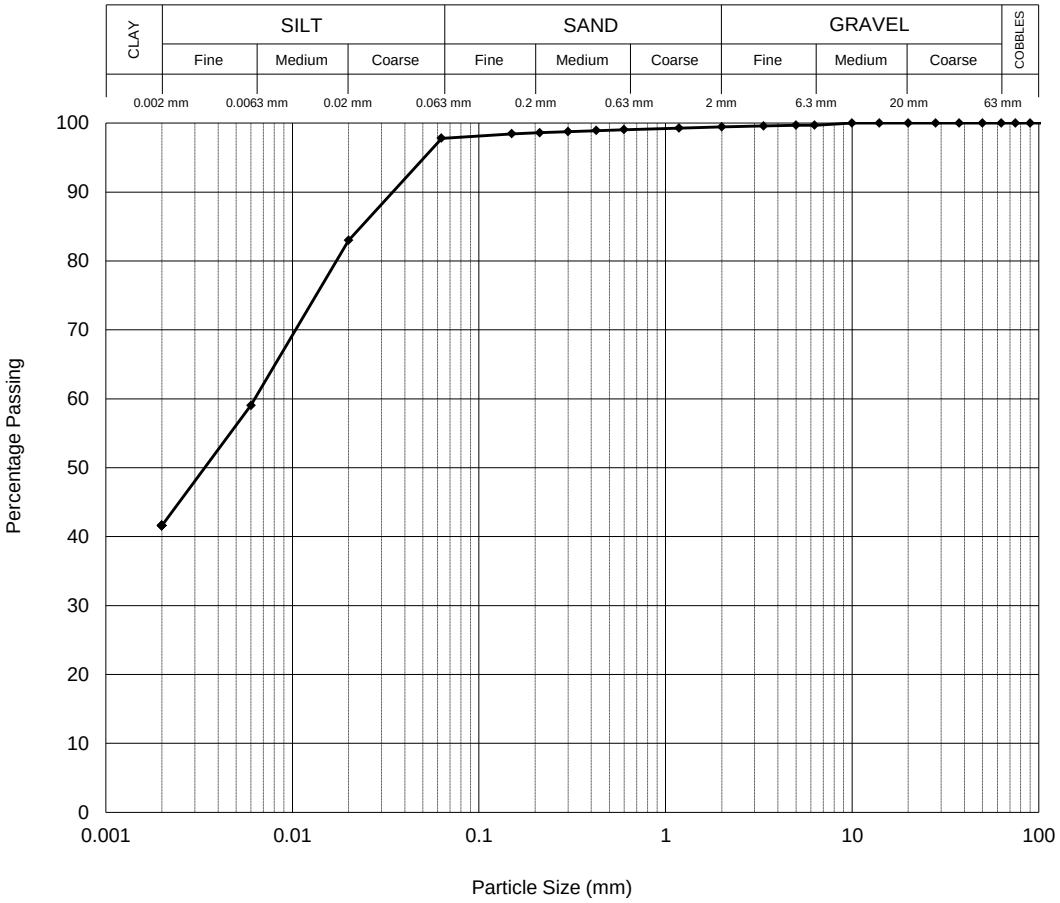
BH / TP No.	GT5
Sample Ref	D1-L4
Sample Type	B

Description

Dark grey silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	59
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-6	GT9	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.2	100	53	21	32		
E1 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			18.9	100	48	20	28		
E2 L1	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	47	20	27		
F1 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.0	100	47	20	27		
F3 L1	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.5	100	47	21	26		
F4 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.8	100	49	21	28		
G1 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT5		F1L2	B	Dark grey very clayey SILT with rare fossil fragments.	2.70	2
GT8		F3L1	B	Dark grey very clayey SILT with rare fossil fragments.	2.71	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

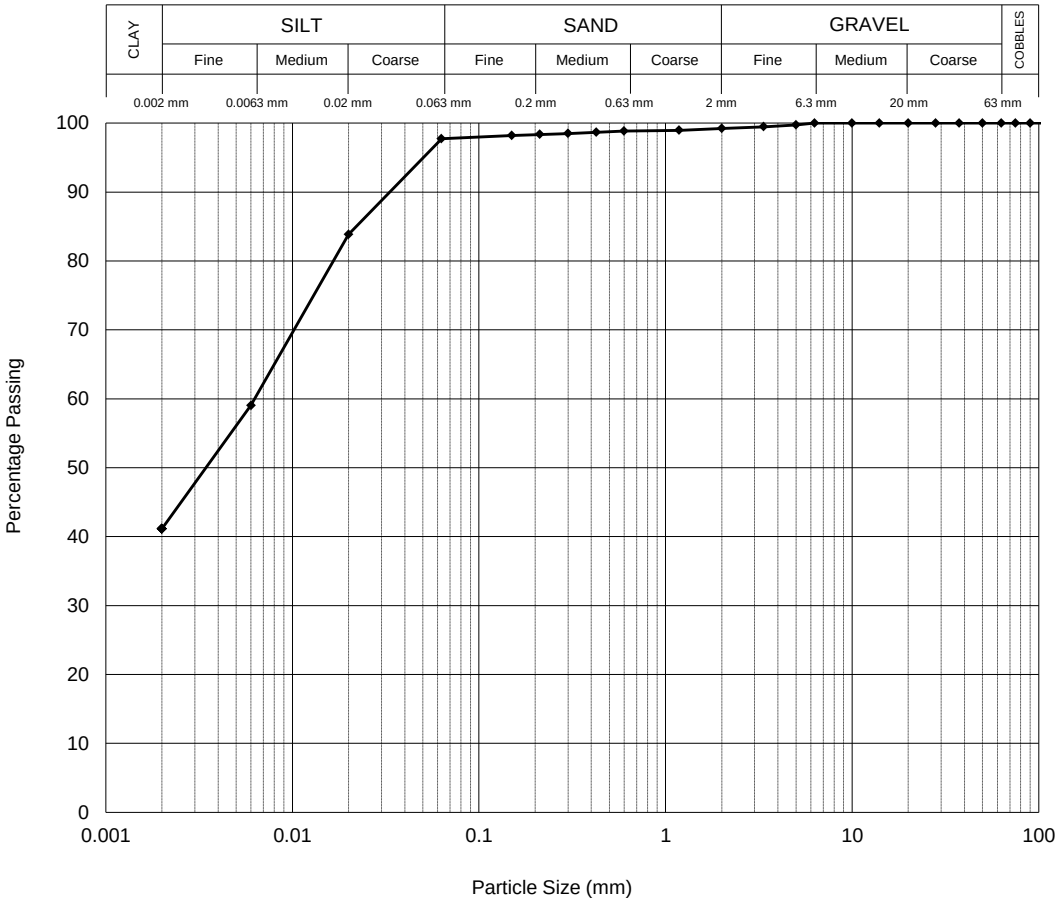
BH / TP No.	GT5
Sample Ref	F1L2
Sample Type	B

Description

Dark grey very clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	59
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

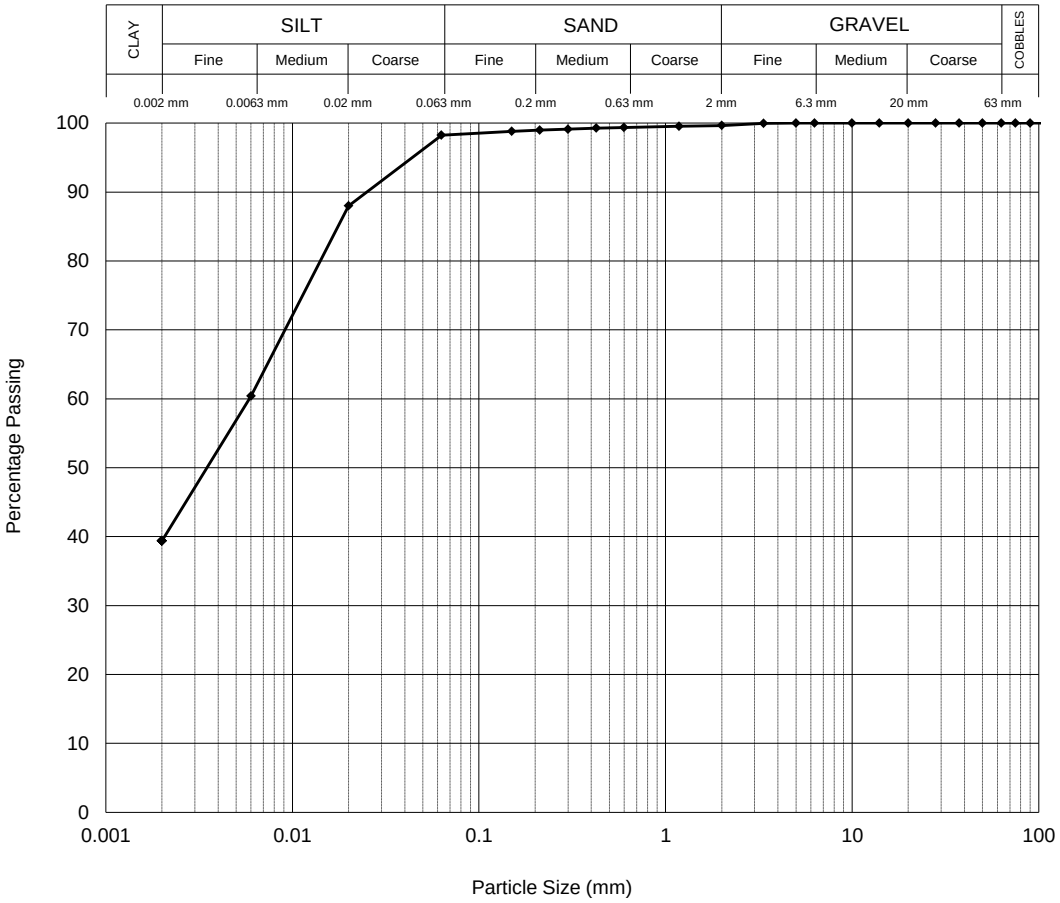
BH / TP No.	GT8
Sample Ref	F3L1
Sample Type	B

Description

Dark grey very clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	60
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	59
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L1	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	21	27		
E2 L3	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	22	27		
E3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.6	100	49	22	27		
E4 L3	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.3	100	51	22	29		
E5 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		E2L3	BB	Dark grey silty CLAY	2.69	2
GT6		E5L3	BB	Dark grey silty CLAY	2.67	2
GT8		C4L1	BB	Dark grey silty CLAY	2.67	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

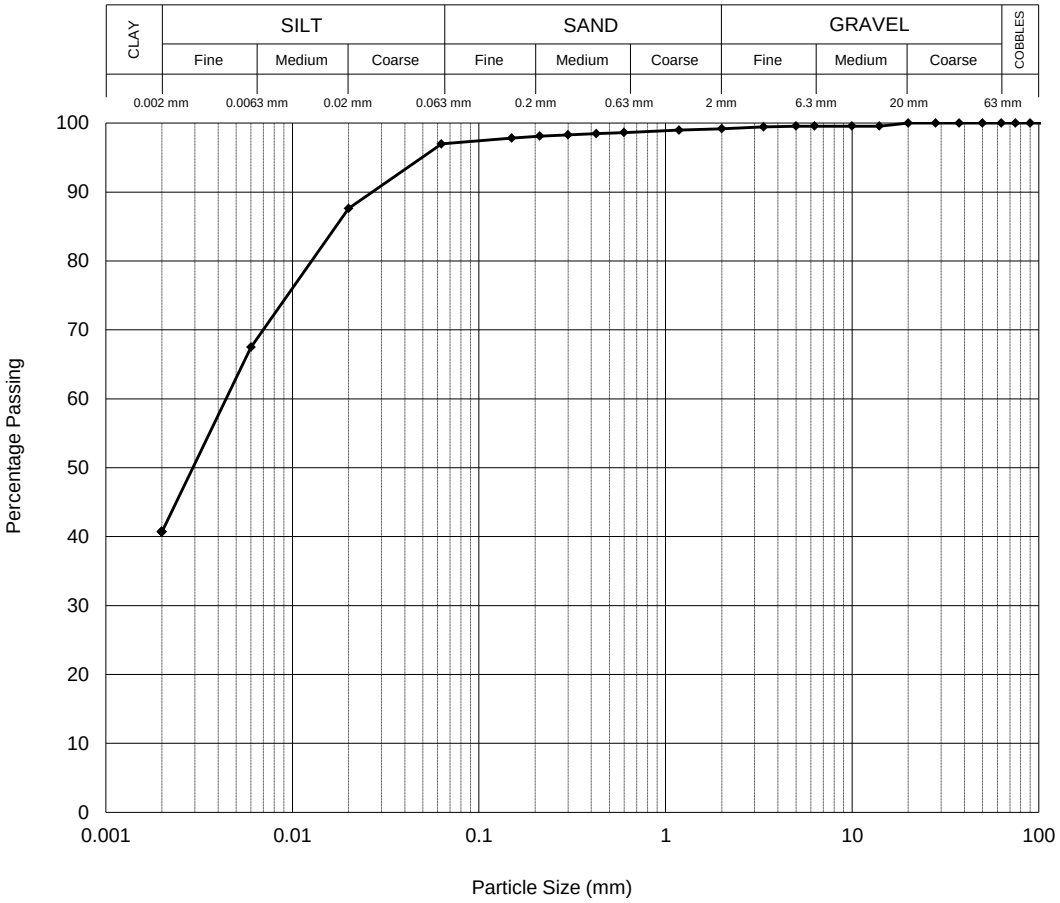
BH / TP No.	GT3
Sample Ref	E2L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	67
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

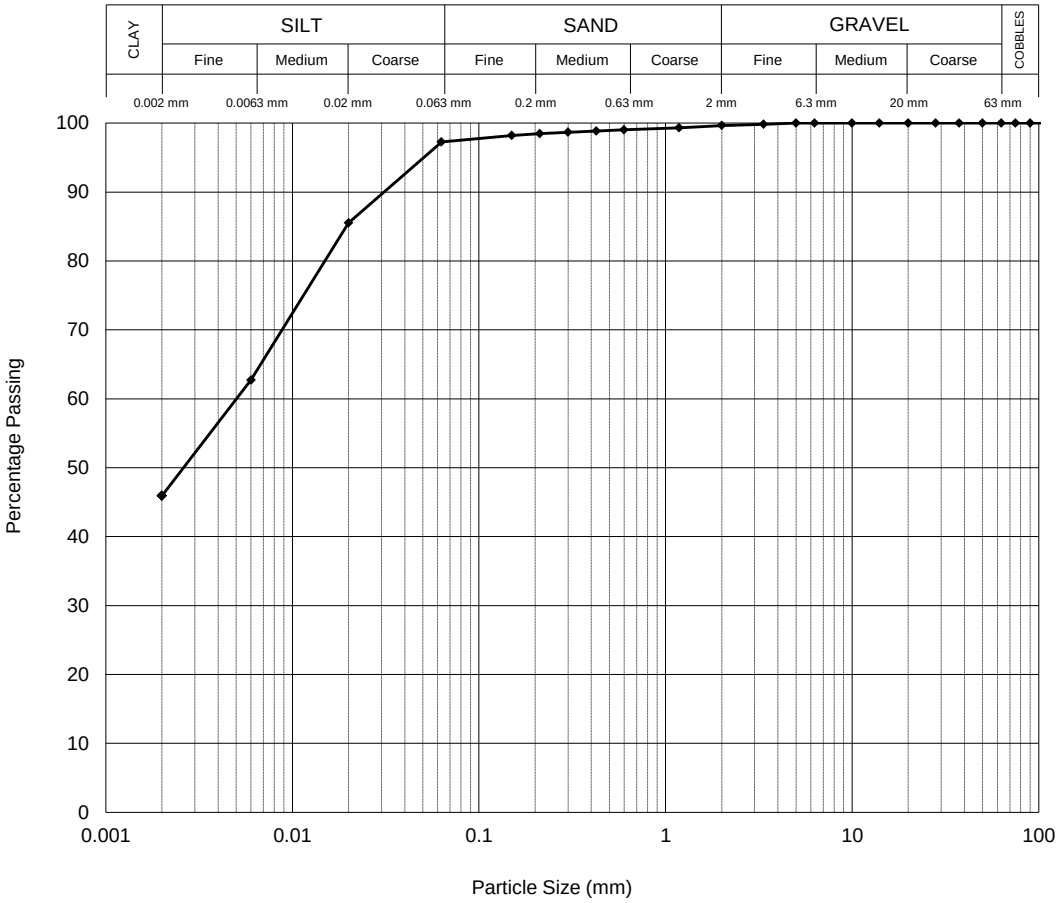
BH / TP No.	GT6
Sample Ref	E5L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	46

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	51
Clay	47

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

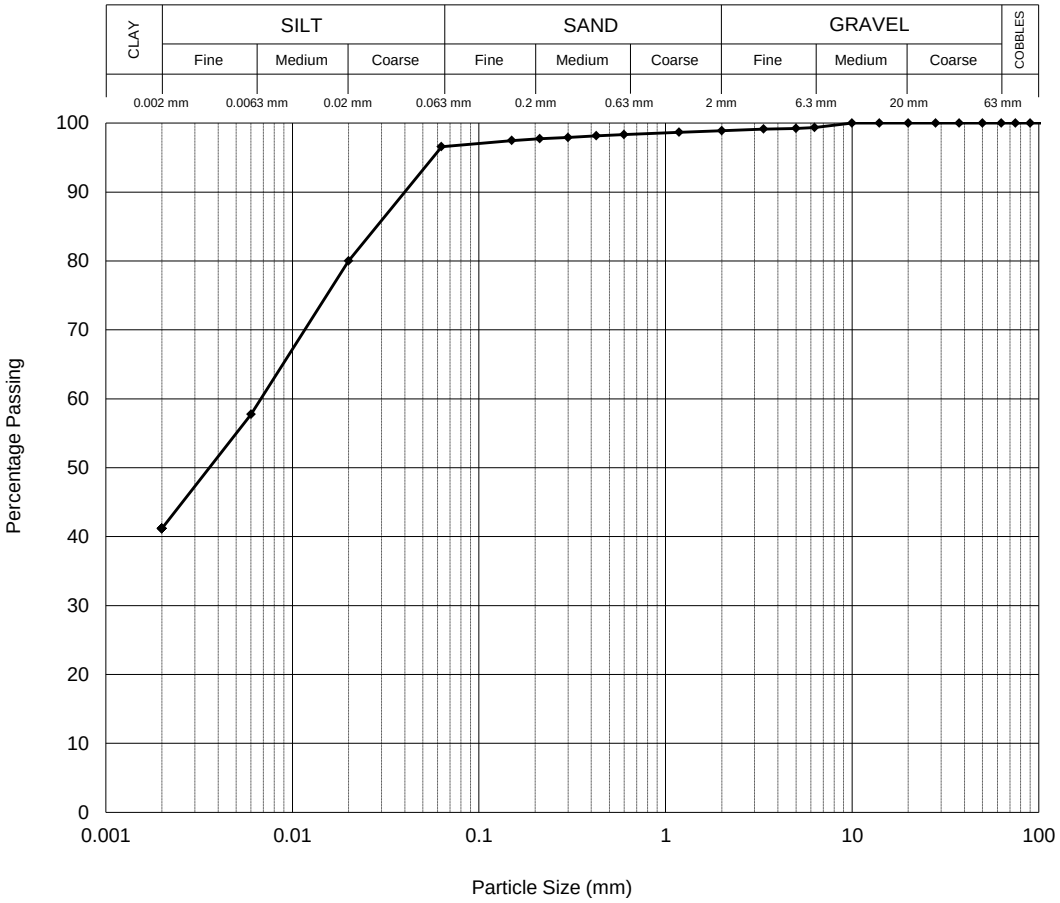
BH / TP No.	GT8
Sample Ref	C4L1
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13038

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	25	Jul-18
Date of receipt of testing instructions	25	Jul-18
Date testing started:	26	Jul-18
Date of issue:	31	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
E3 L4	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	48	21	27		
E4 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.6	100	47	20	27		
E5 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	49	20	29		
G1 L5	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E3L4	B	Dark grey silty CLAY	2.67	2
GT4		E5L4	B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27866

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

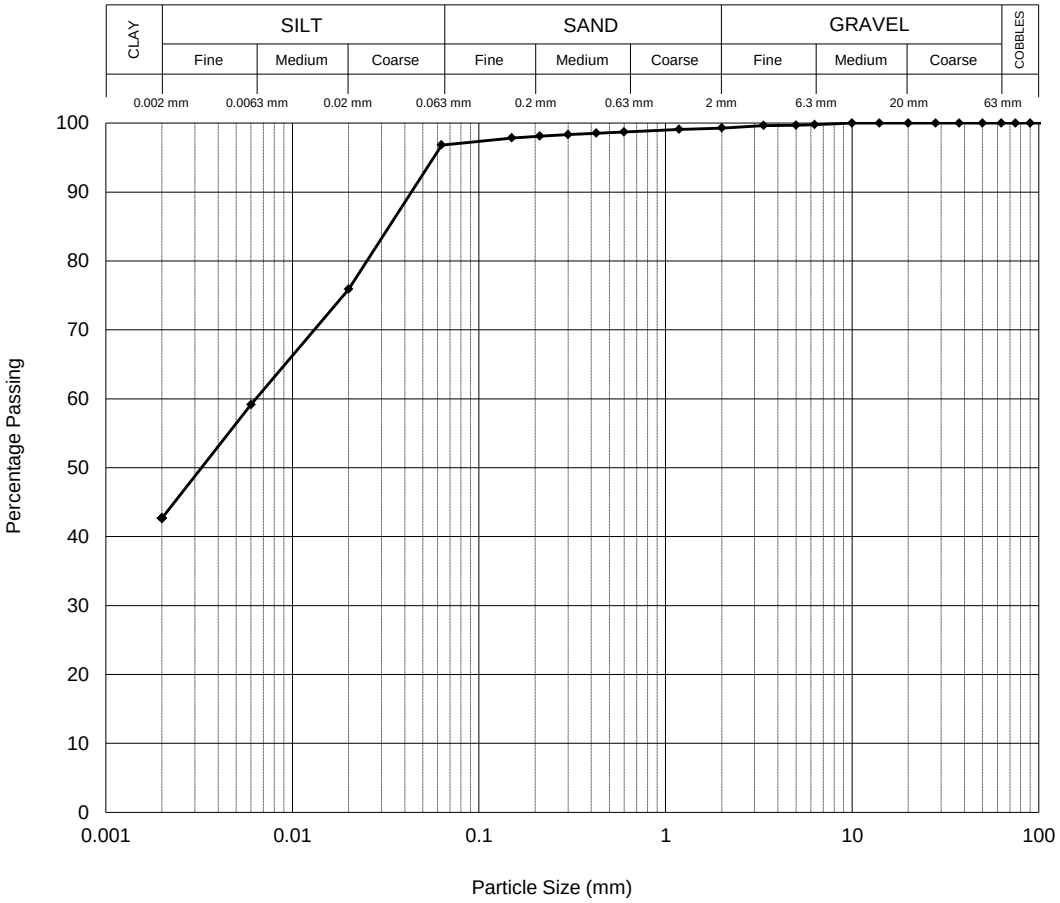
BH / TP No.	GT1
Sample Ref	E3L4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	59
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	54
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27866

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

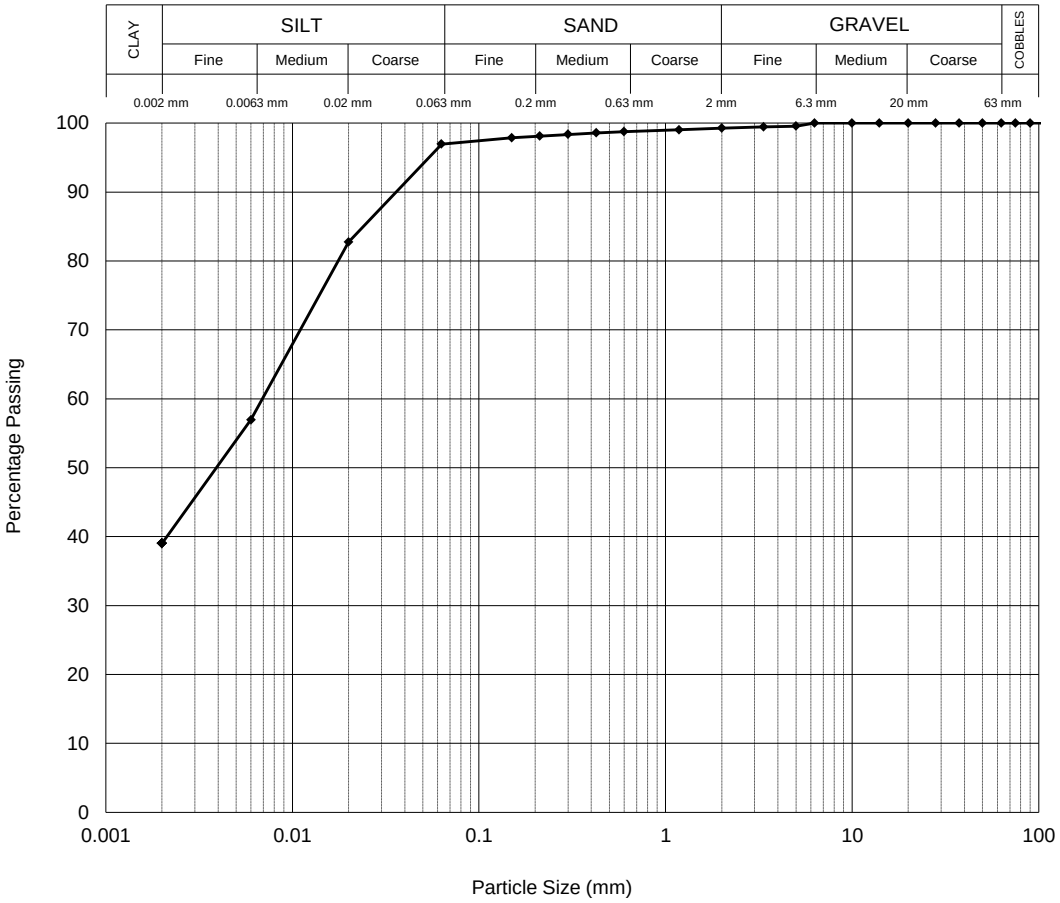
BH / TP No.	GT4
Sample Ref	E5L4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	57
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	58
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27866

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13048

Number of samples submitted for testing:	7	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	31	Jul-18
Date of receipt of testing instructions	31	Jul-18
Date testing started:	2	Aug-18
Date of issue:	31	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L-1	GT2	0.00		B	Dark grey slightly sandy CLAY			21.5	100	48	21	27		
B1 L-1A	GT4	0.00		B	Dark grey slightly sandy CLAY			22.6	100	48	21	27		
B1 L-2	GT1	0.00		B	Dark grey slightly sandy CLAY			22.3	100	48	22	26		
E1 L5	GT5	0.00		B	Dark grey slightly sandy CLAY			23.1	100	48	22	26		
E2 L5	GT7	0.00		B	Dark grey slightly sandy CLAY			21.6	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		B1 L-1A	B	Dark grey SILT and CLAY	2.70	2
GT6		E2L5	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27868

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

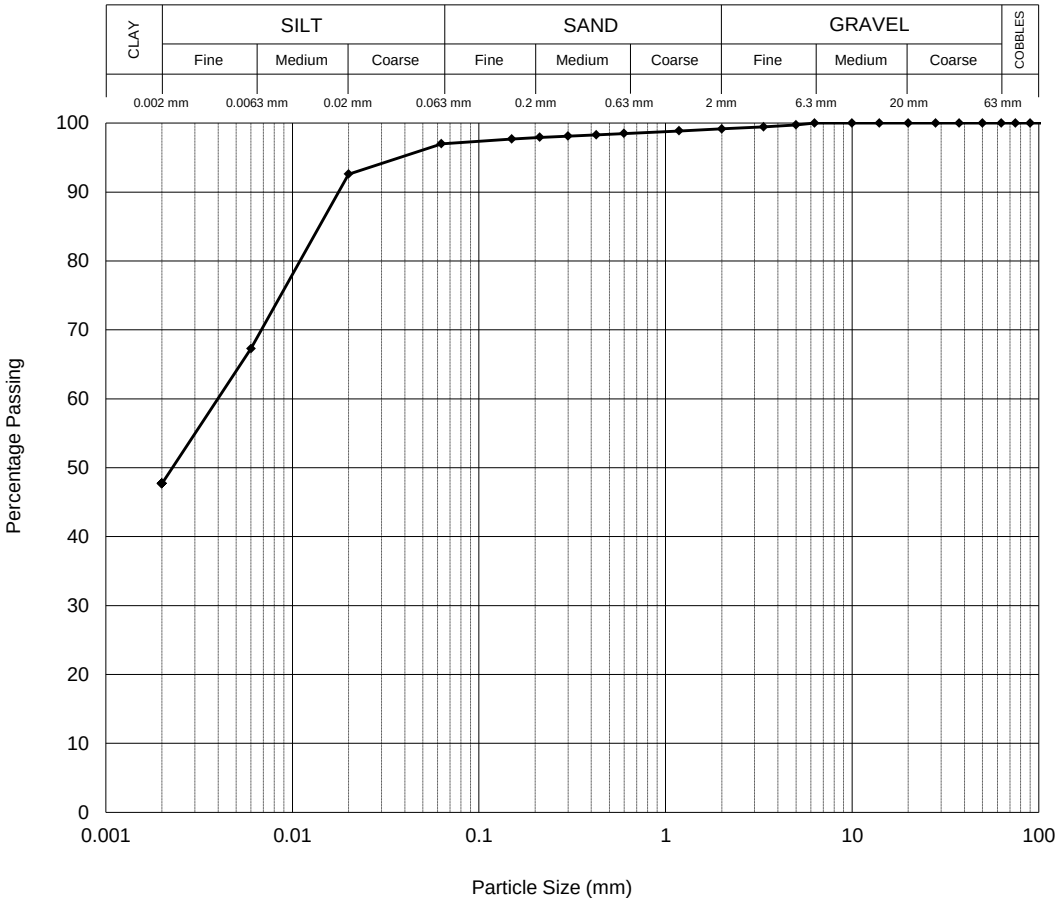
BH / TP No.	GT3
Sample Ref	B1 L-1A
Sample Type	B

Description

Dark grey SILT and CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	93
6 µm	67
2 µm	48
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	49
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27868

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

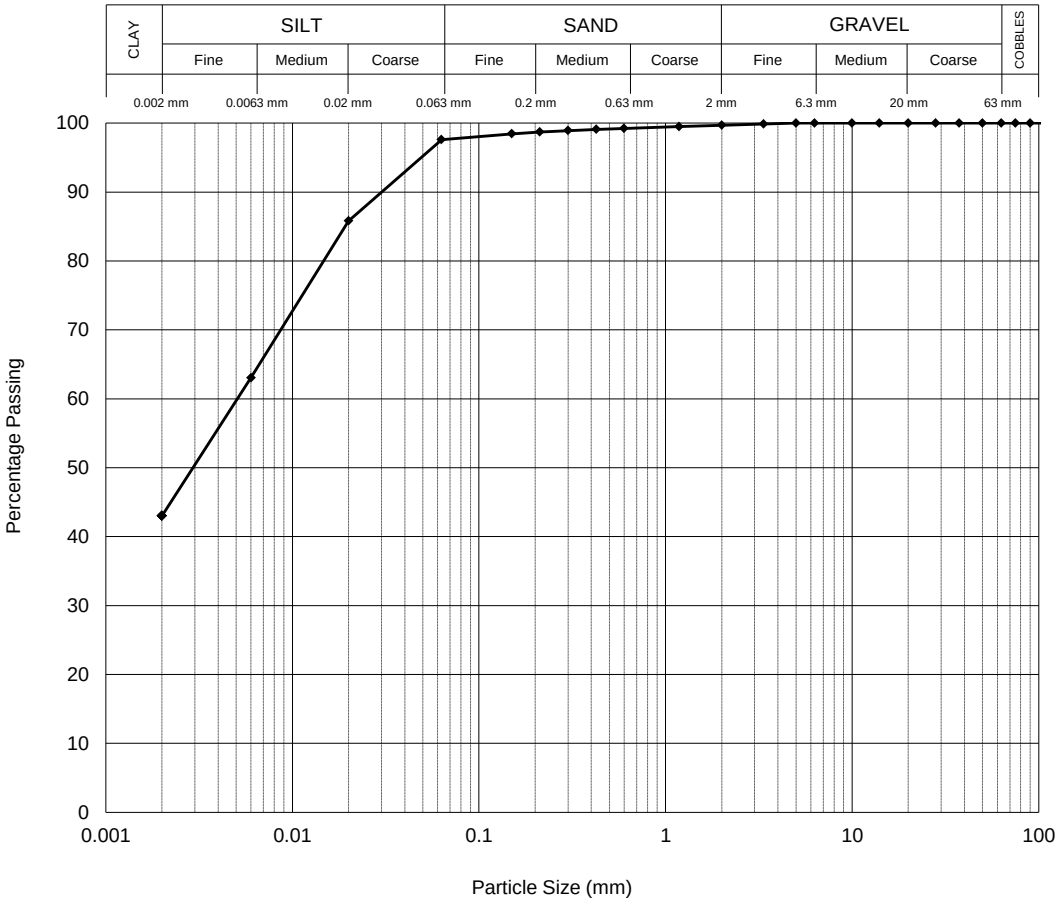
BH / TP No.	GT6
Sample Ref	E2L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	55
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27868

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 7 – Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Tuesday 28 August 2018 rain on weekend saturated site



Wednesday 29 August 2018 leachate removed

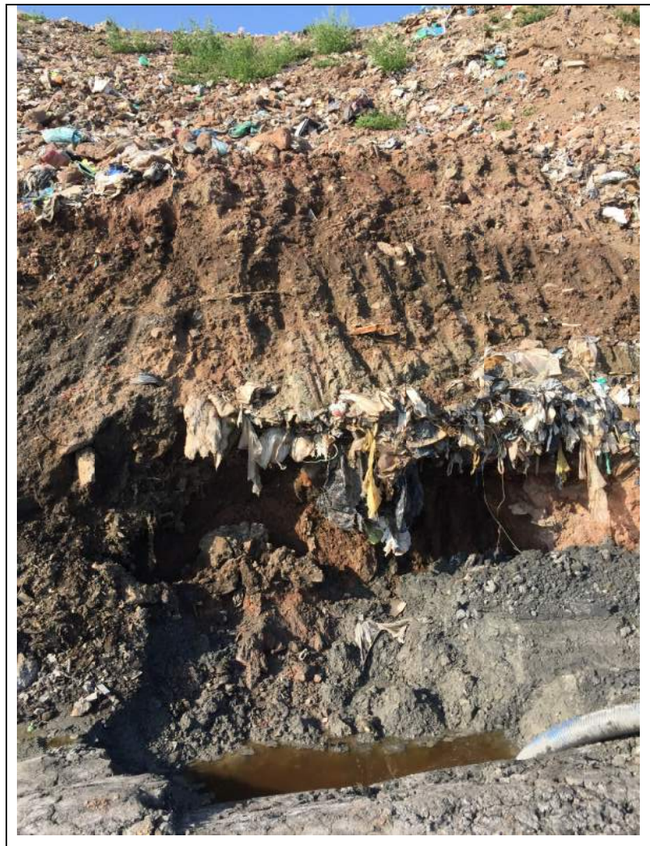
Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
Wednesday 29 August 2018 pumped leachate 9am to 12pm	**Thursday 30 August 2018 Remove silt & saturated clay from Grid D3 Sump**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

	
Friday 31 August 2018 leachate Grip and sump at Grid C1	**Friday 31 August 2018 cutting face weathering Grid D1**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
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Friday 31 August 2018 no tension cracks at top of slope	

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 12 WE 09/09/18

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 09-09-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		09-09-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Contents

1.0 Introduction

2.0 Weather

3.0 Progress For the Week

3.1 Stockpile
3.2 Work – progress
3.3 Layer 1
3.4 Layer 2
3.5 Layer 3
3.6 Layer 4

4.0 Testing

4.1 Core Cutter Samples
4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

1. Progression Plan
2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

No rain over the weekend, Monday to Friday overcast with some light showers.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile is generally good. Some delay with delivery of clay has been experienced, as material is being deposited closer to the stockpile it is being installed quicker and more material can be laid.

Up to the 29 August 2018, 37,998 tonnes of material was delivered to site.
The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B1L3, B2L10, C2L9, D2L8, D3L3, D4L3

Testing by CJ Associates was not undertaken Wednesday 05 September 18 lack of clay deliveries delaying progress.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

Two 10-ton front loader, 2 excavators, dozer, roller and bowser were on site.

Some delay of 1-3hours per day was experienced due to lack of clay deliveries everyday this week.

3.3a Additional Layers
No work undertaken

3.3b Levelling the Area
No work undertaken

3.3 Layer 1
No work undertaken

3.4 Layer 2
D3L2

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

3.5 Layer 3
B1L3, D3L3, D4L3

3.6 Layer 4
C3L4

3.7 Layer 5
No work undertaken

3.8 Layer +6
B2L10, C2L9,

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

8 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
8 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at D2L8 on 06 September 2018.
One results have been received this week.

4.3 MC and PI,

Details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 64KN/ m^2 recorded.

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped Wednesday 05 September 2018.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor pumped out the adjacent cell Wednesday 05 September 2018, following the removal of a tanker of leachate, there is noticeably less leachate flowing into the cell 4 site.
Some weathering of the cut face surface has been noted.

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 1 - Progression Plan

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D& MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D& MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/ 18	P- 28/06/ 18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1	L2A	L2B	L2	L3	L4	L5	L5A	L6	L7	L8	L9	

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														
Date																														
A2																														
Date																														
A3																														
Date																														
B1	MC&PI/DS&D/D&MC	P Sh-125 P-PI 03/09/18	MC&PI/DS&D/D&MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/D&MC	P Sh-150			MC&PI/D&MC	P-Sh-90																		
Date	T-13/06/18	P 15/08/18	T-14/06/18	P 15/08/18 P-PI 03/09/18 P-DS&D 31/08/18	T-16/06/18	N/A B1L2	T-16/06/18	P 20/08/18 P-PI 03/09/18			T-04/09/18	P-06/09/18																		
B2	MC&PI/D&MC	P Sh-max					MC&PI/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&S**/D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/D&MC And S	Sh-120			MC&PI/D&MC And S	Sh-100	MC&PI/D&MC And S	P Sh-96	MC&PI/DS&D/D&MC And S	P Sh-115	MC&PI/DS&D/D&MC And S	P Sh-122	MC&PI/D&MC And S	P-Sh-125
Date	T-19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P-28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P-03/08/18 P-PI 03/09/18	T 23/08/18	P 24/08/18	T 24/08/18	P 28/08/18	T 04/09/18	P-06/09/18
B3	MC&PI/DS&D/D&MC	P Sh-70					MC&PI/DS&D/D&MC	P Sh-105			MC&PI/DS&D/D&MC	P Sh-94																		
Date	T-19/06/18	P 20/07/18 F-PI Moisture 08/08/18 P- DS 24/08/18					T-02/08/18	P 03/08/18 P-PI 03/08/18 P-DS&D 03/09/18			T-22/08/18	P 23/08/18																		
B4	MC&PI/D&MC	P Sh-86					D&MC	P S-100			MC&PI/DS&D/D&MC	P Sh-75																		
Date	T-19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T-22/08/18	P 23/08/18																		
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2			N/A B4L3	N/A B4L3																		
Date	T-19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2			N/A B4L3	N/A B4L3																		
C1	MC&PI/**D&S**/D&MC	P Sh-125	MC&PI/D&MC and S	P Sh-120			MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh-106			MC&PI/D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/D&MC	P Sh-89	MC&PI/DS&D/D&MC	P Sh-125						
Date	T-20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T-29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T-15/08/18	P 16/08/18 P-PI 03/09/18	T-17/08/18	P 20/08/18 P-PI 03/09/18						
C2	MC&PI/**D&S**/D&MC	P Sh-max					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh -122			MC&PI/**D&S**/ D&MC And S	Sh-106			MC&PI/**DS&D**/ D&MC And S	Sh-80	MC&PI/**DS&D**/ D&MC And S	Sh-145	MC&PI/D&MC	P-116	MC&PI/DS&D/D&MC And S	P-Sh-150		
Date	T-19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P-28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18	T-28/07/18	P-29/0818	T 04/09/18	P-06/09/18		
C3	MC&PI/**D&S**/D&MC	P Sh- 128					MC&PI/**D&S**/D&MC	P Sh- 80			MC&PI/**D&S**/D&MC	P Sh- 150	MC&PI/**D&S**/D&MC	P Sh- 88																
Date	T-19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T-02/08/18	P 06/08/18 P-PI 03/09/18			T-21/08/18	P 23/08/18	T-30/08/18	P 03/09/18																
C4	MC&PI/D	Sh- 115					MC&PI/D	P			MC&PI/	P	MC&PI/	P																

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

	S&D/D&MC						S&D/D&MC	Sh- 124			D&MC	Sh- 100	D&MC And S	Sh-150														
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T- 02/08/18	P 03/08/18 P-PI 03/09/18 P-DS&D 03/09/18			T- 21/08/18	P 23/08/18	T 23/08/18	P 28/08/18														
C5	MC&PI/D&MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100														
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18	T 23/08/18	P 24/08/18														
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max	MC&PI/D S&D/D&MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125				
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18 P-DS&D 06/09/18	T-14/08/18	P 16/08/18 P-PI 03/09/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18				
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/ **D&S**/ D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122	MC&PI/ **DS&D/** D&MC And S	Sh-78				
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18 P-PI 03/09/ 18	T 06/09/ 18	P 07/09/ 18				
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58					MC&PI/ **D&S**/D &MC	P Sh- 106			MC&PI/ **D&S**/D &MC	P Sh- 64																
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18					T- 03/09/18	P 04/09/18			T- 07/09/18	P 10/09/18																
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S** /D&MC And S	P Sh-70			MC&PI/ D&MC	P Sh- 80																
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	P- 04/09/18			T- 07/09/18	P 10/09/18																
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142																				
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818																				
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132				
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18	T- 14/08/18	P 16/08/18 P-PI 03/09/18				
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110						
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18						
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78						
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18						
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120						
Date	T- 09/07/18	P 11/07/18 P-PI					T- 12/07/18	P- 13/07/18 P-PI			T- 18/07/18	P 19/07/18 P-PI	T- 24/07/18	P 26/07/18 P-PI			T- 01/08/18	P 02/08/18 P-PI			T- 09/08/18	P-10/08/18 P-PI 03/09/18						

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

		08/08/18						08/08/18 P-DS&D 06/09/18				08/08/18		08/08/18				15/08/18				P- DS&D 06/09/18								
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **DS&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6								
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18 P-DS&D 06/09/18					T- 03/07/18	P 05/07/18 F-PI Moistur 08/08/18 P- DS&DS 31/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6								
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 06/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122								
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6								
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18								
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6								
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6								
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90						
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D					T- 05/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D			T- 03/08/18	P 06/08/18 P-PI 03/09/18	T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D					

Streetscene
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		08/08/18						06/09/18						24/08/18				06/09/18						06/09/18				
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7							
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18			T- 07/08/18	P 09/08/18							

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3		(1 per 2 Cells/layer) 1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Permeability

Grid Ref	Result	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1		19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3		22/06/18		P 31/08/18
D2-L4		27/06/18		P 31/08/18
F3-L1		04/07/18		P 31/08/18
F4-L2		05/07/18		
D4L-9		10/07/18		P 06/09/18
E5-L2		12/07/18		
E3-L3		18/07/18		P 31/08/18
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		
C2-L7		20/08/18		
D2L8		06/09/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability Tests

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	D4 L-9
Sample Type:	C

Description:
Firm dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.53	99.43
Height	*mm*	100.95	100.85
Moisture Content	*%*	26	27
Bulk Density	*Mg/m³*	1.98	2.00
Dry Density	*Mg/m³*	1.58	1.58

SATURATION STAGE

Saturation initially by constant moisture content.

Pore pressure coefficient ('B' value)		1.00	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	2.4

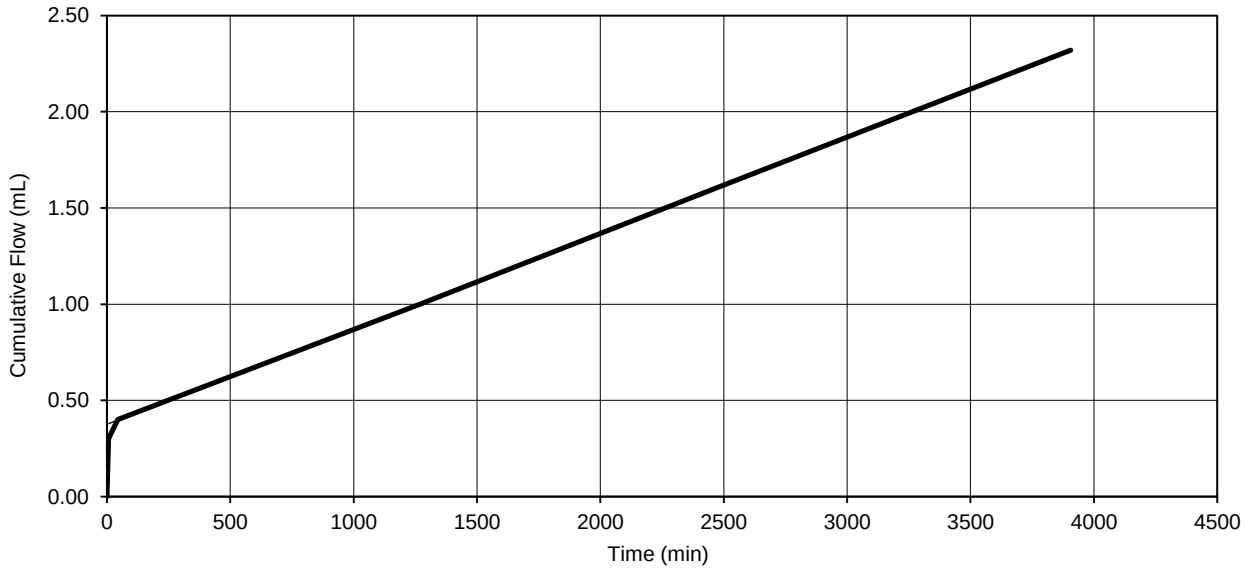
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 1.1×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

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Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1484**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**03/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D3-L2-C1	Core 2 D4-L2-C1			
Bulk Density	2.08	2.04			
Moisture Content	21	21			
Dry Density	1.72	1.68			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	1.2	3.2			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 04/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1512**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**05/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L3-C1	Core 2 B2-L10-C1	Core 3 C2-L9-C1		
Bulk Density	2.09	2.07	2.04		
Moisture Content	21	22	21		
Dry Density	1.73	1.70	1.69		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	0.6	1.0	2.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 06/09/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1523**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**06/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D2-L8-C1				
Bulk Density	2.04				
Moisture Content	22				
Dry Density	1.67				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	2.4				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 07/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1551**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**07/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D3-L3-C1	Core 2 D4-L3-C1			
Bulk Density	2.05	1.98			
Moisture Content	21	23			
Dry Density	1.69	1.60			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.6	3.9			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 08/09/2018
			R Anstee, Materials and Field Testing Director	Fig

Streetscene
Y-Strydynun

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Appendix 4 – Field Logs

Available on request

Streetscene
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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1485	D3-L2 03.09.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
1486	D3-L2 03.09.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	134	
1487	D3-L2 03.09.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	106	
1488	D4-L2 03.09.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	110	
1489	D4-L2 03.09.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1490	D4-L2 03.09.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	70	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	04/09/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1513	B1-L3 05.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	122	
1514	B1-L3 05.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	90	
1515	B1-L3 05.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1516	B2-L10 05.09.18 HSV1	Layer 10	Grey slightly sandy slightly gravelly CLAY	150+	
1517	B2-L10 05.09.18 HSV2	Layer 10	Grey slightly sandy slightly gravelly CLAY	150+	
1518	B2-L10 05.09.18 HSV3	Layer 10	Grey slightly sandy slightly gravelly CLAY	125	
1519	C2-L9 05.09.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1520	C2-L9 05.09.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1521	C2-L9 05.09.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1524	D2-L8 06.09.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1525	D2-L8 06.09.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1526	D2-L8 06.09.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	78	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	07/09/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1552	D3-L3 07.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1553	D3-L3 07.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	102	
1554	D3-L3 07.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	64	
1555	D4-L3 07.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	
1556	D4-L3 07.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
1557	D4-L3 07.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	80	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/09/2018	
		R Anstee, Materials and Field Testing Director		

Streetscene
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Appendix 6 – PI, PL, MC, LL Results

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F3L2		Dark grey clayey SILT with rare fossil fragments.	2.70	2
GT4		F4L2		Dark grey CLAY and SILT with rare fossil fragments.	2.67	2
GT7		C4L7		Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.	2.69	2
				Cell C4-L7 not C4L7 WW- 06/09/18		

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

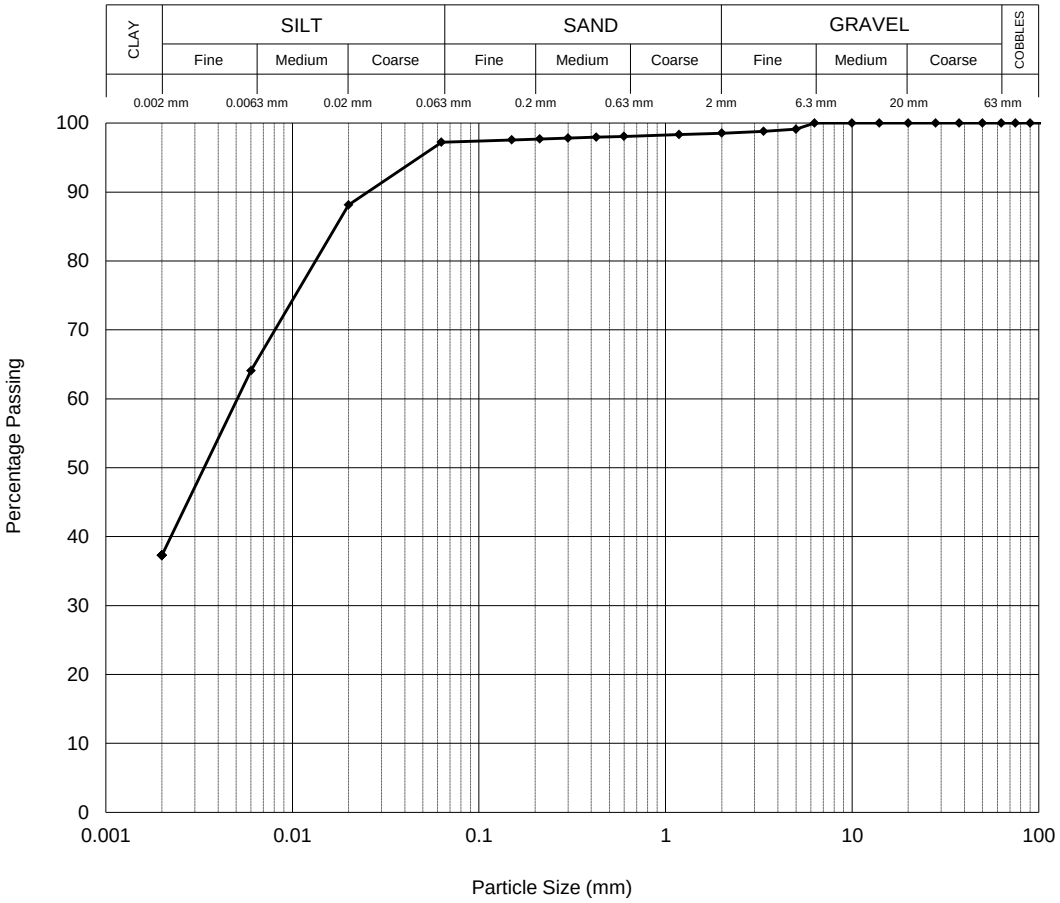
BH / TP No.	GT3
Sample Ref	F3L2

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	64
2 µm	37

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	60
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

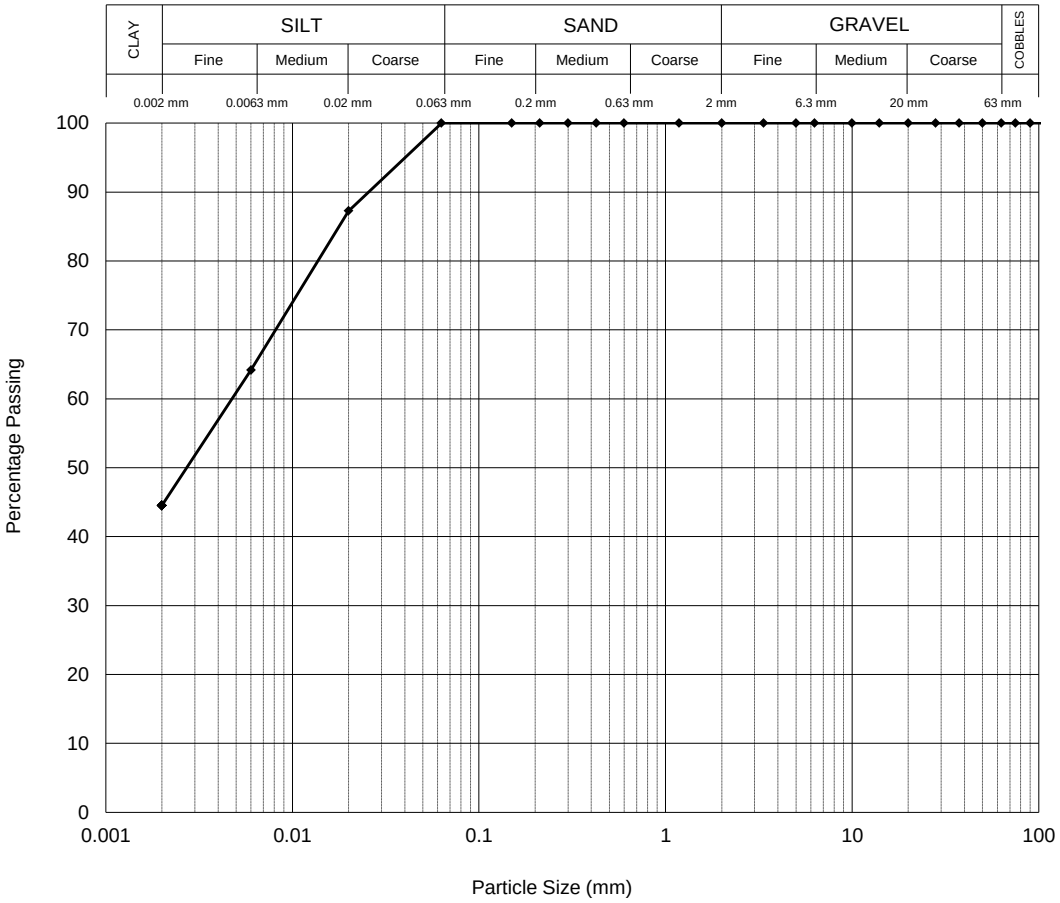
BH / TP No.	GT4
Sample Ref	F4L2

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	100
212 µm	100
150 µm	100
63 µm	100



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	64
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	0
Silt	55
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

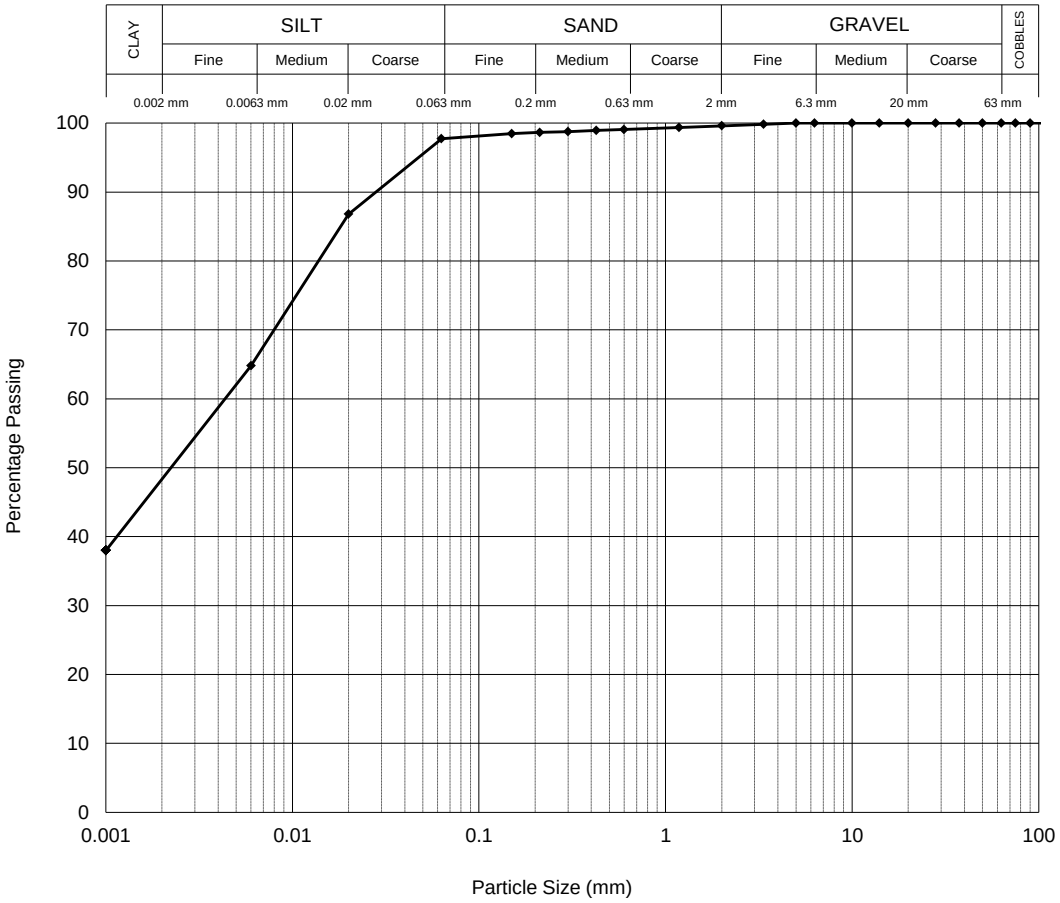
BH / TP No.	GT7
Sample Ref	C4L7

Description

Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
1 µm	38

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E4L2		Dark grey CLAY and SILT with rare medium gravel and fossil fragments.	2.66	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

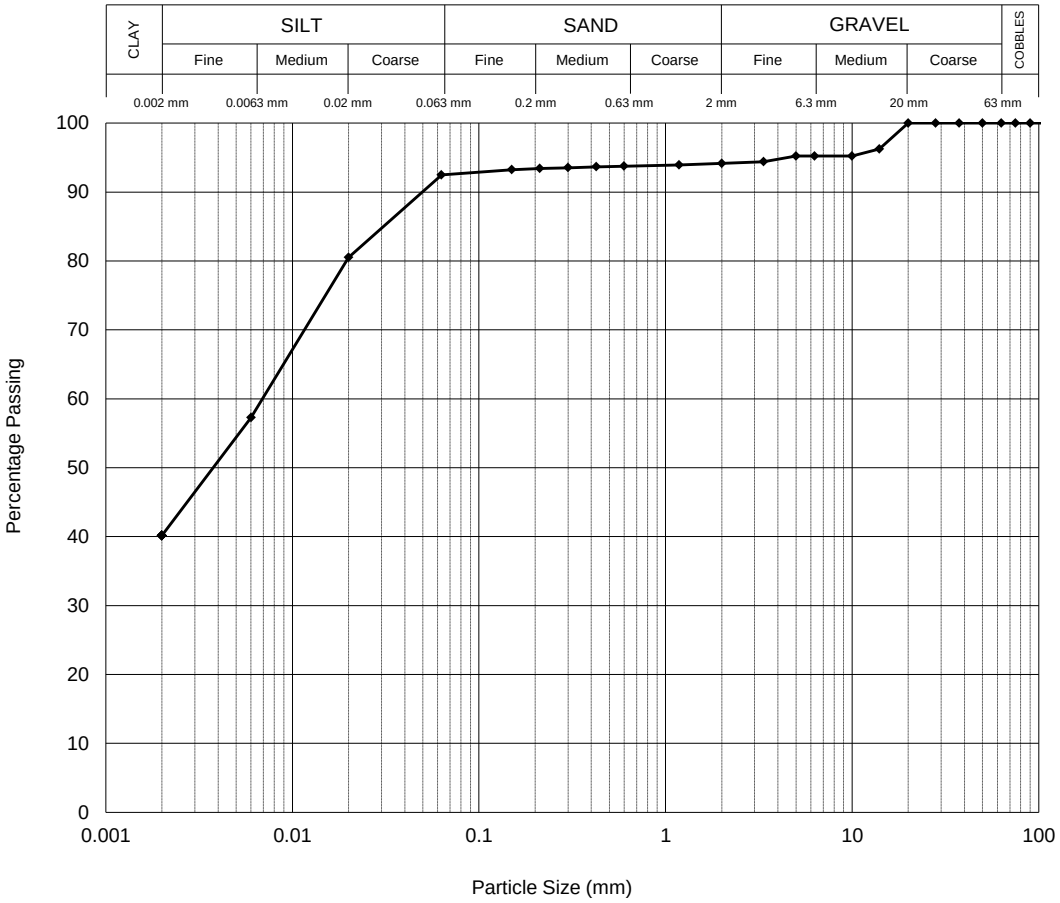
BH / TP No.	GT1
Sample Ref	E4L2

Description

Dark grey CLAY and SILT with rare medium gravel and fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	96
10.0 mm	95
6.30 mm	95
5.00 mm	95
3.35 mm	94
2.00 mm	94
1.18 mm	94
600 µm	94
425 µm	94
300 µm	94
212 µm	93
150 µm	93
63 µm	92



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	57
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	6
Sand	2
Silt	52
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT11		F3L5	B	Dark grey silty CLAY	2.66	2
GT5		G2L5	B	Dark grey silty CLAY	2.70	2
GT6		G4L5	B	Dark grey clayey SILT	2.69	2
GT7		G5L4	B	Dark grey clayey SILT	2.72	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

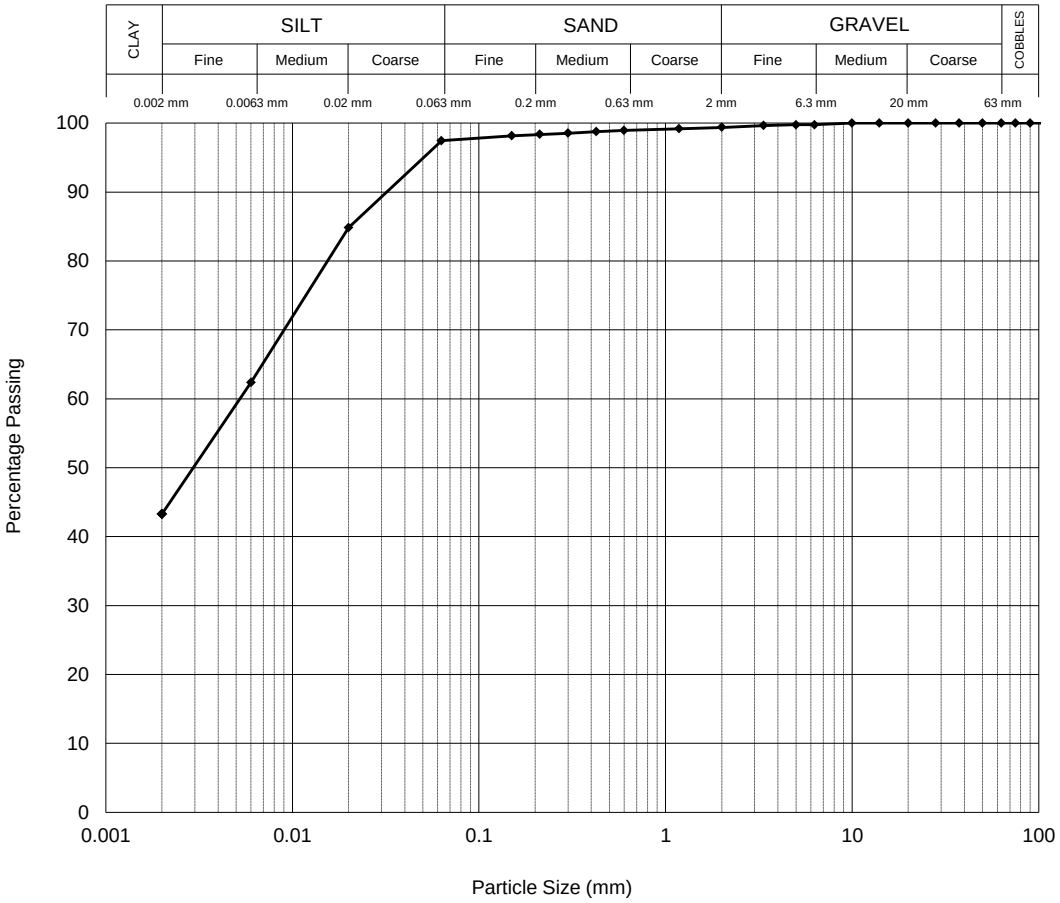
BH / TP No.	GT5
Sample Ref	G2L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	62
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	54
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

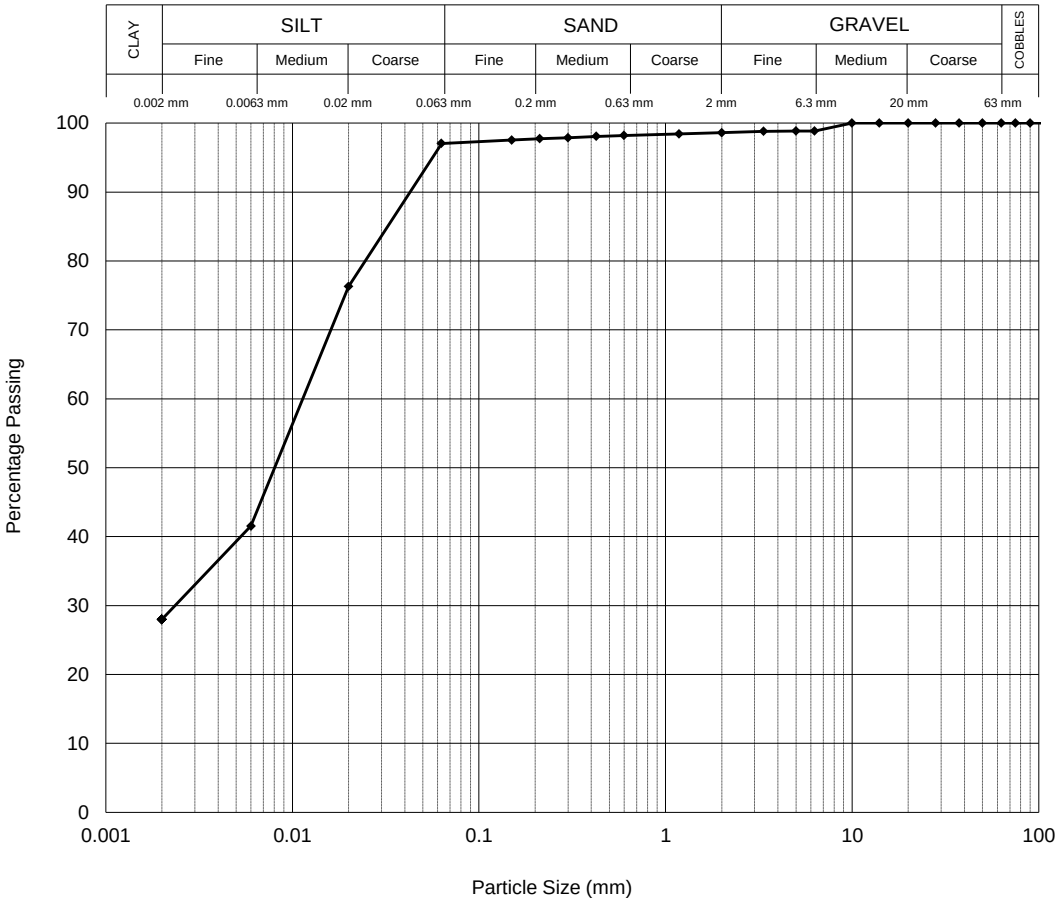
BH / TP No.	GT6
Sample Ref	G4L5
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	42
2 µm	28

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	69
Clay	28

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

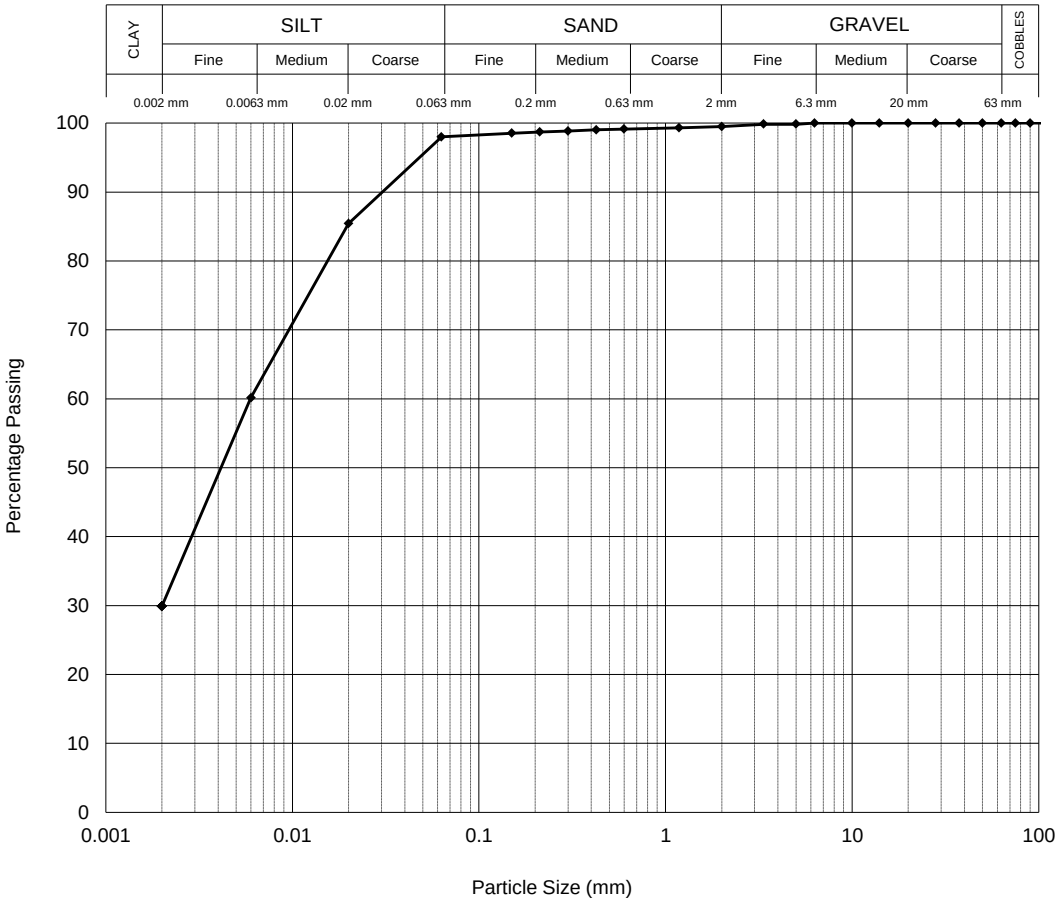
BH / TP No.	GT7
Sample Ref	G5L4
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	60
2 µm	30

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	68
Clay	30

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

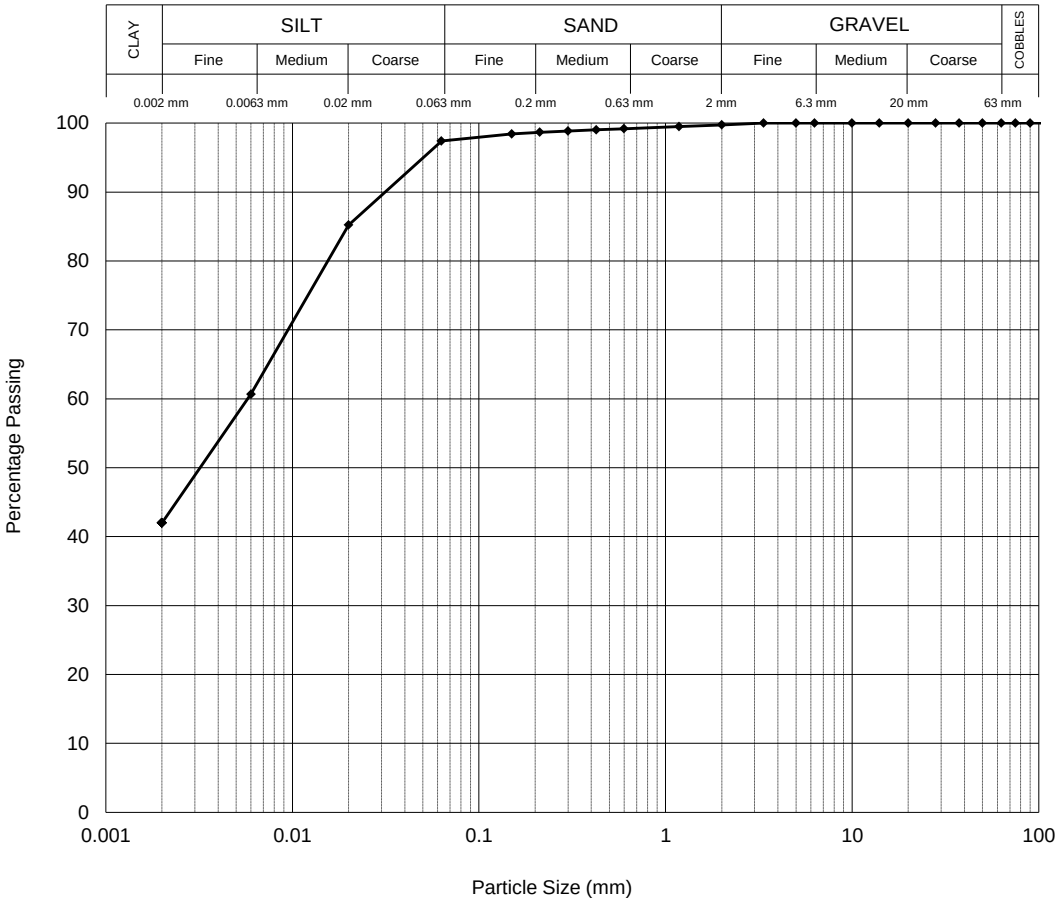
BH / TP No.	GT11
Sample Ref	F3L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	55
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F2L6	B	Dark grey silty CLAY	2.70	2
GT6		F3L6	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

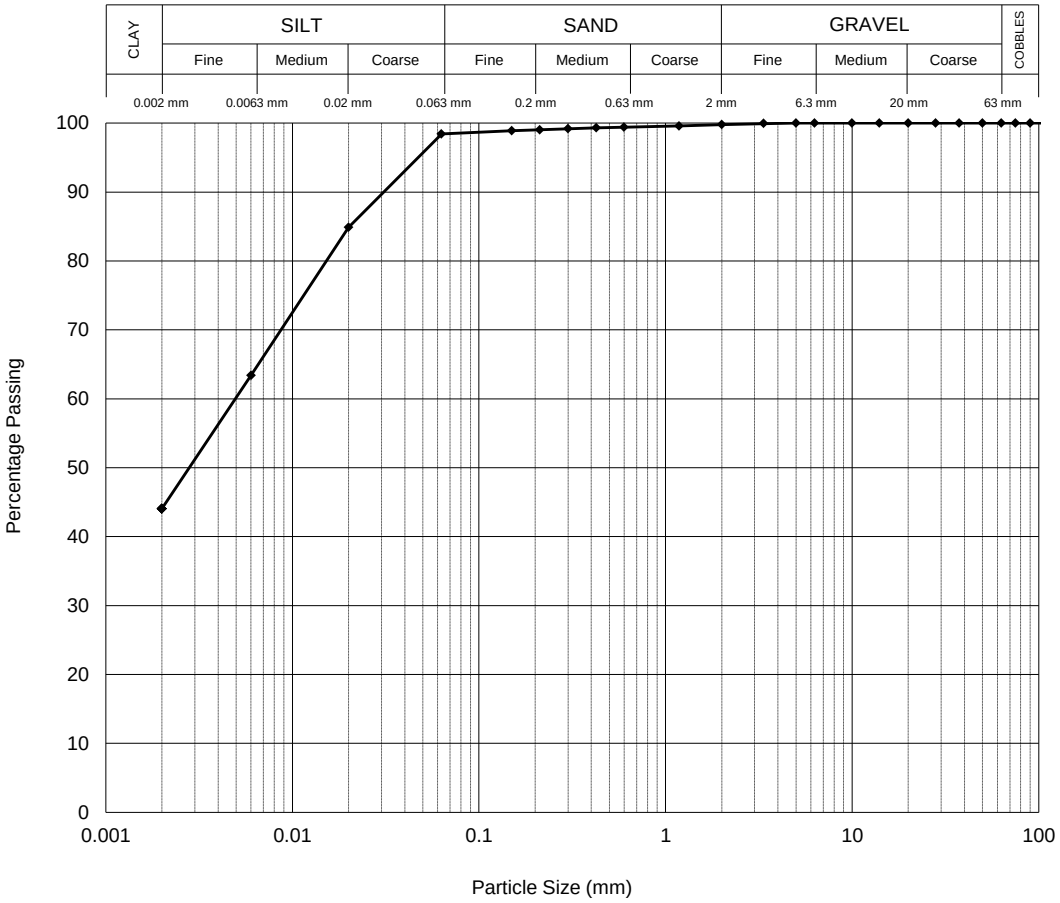
BH / TP No.	GT3
Sample Ref	F2L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	63
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

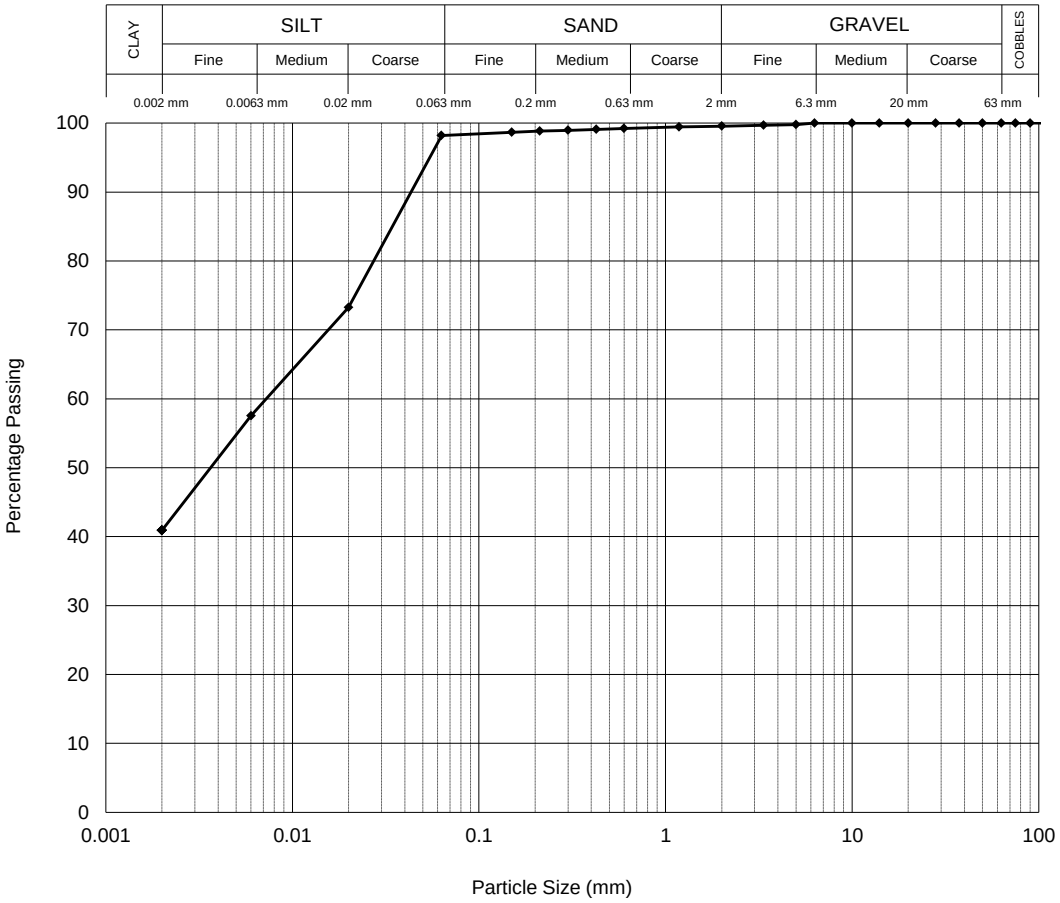
BH / TP No.	GT6
Sample Ref	F3L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	73
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	57
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13051

Number of samples submitted for testing:	8	sample (s)
Natural Moisture Content	6	test(s)
Atterberg Limit	6	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	29	Jun-18
Date of receipt of testing instructions	29	Jun-18
Date testing started:	2	Jul-18
Date of issue:	5	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C1 L5	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	47	20	27		
C4 L-4	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	47	20	27		
D1 L5	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	20	27		
E1 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	49	21	28		
F1 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	48	20	28		
G1 L1	GT8	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT4		F1L1	B	Dark grey silty CLAY	2.67	2
GT6		D1L5	B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
02/08/2018

Project Number:

GEO / 27736

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

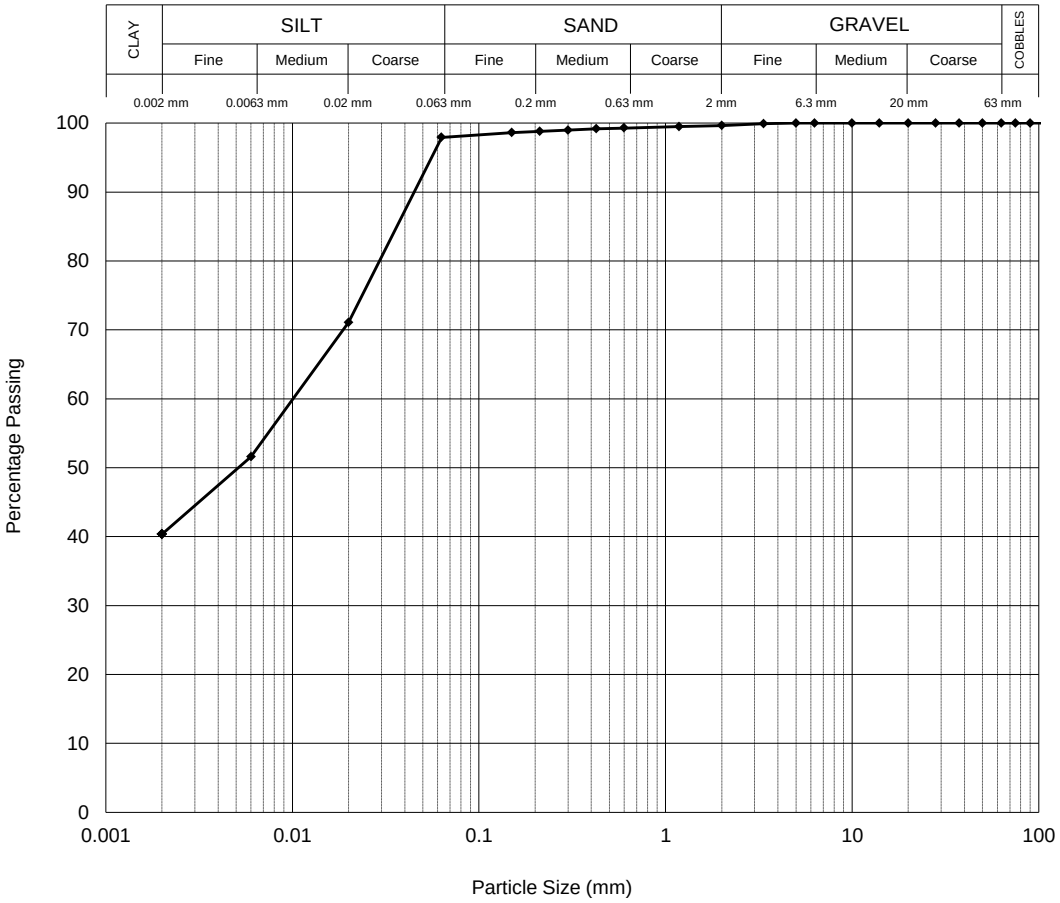
BH / TP No.	GT4
Sample Ref	F1L1
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	71
6 µm	52
2 µm	40
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	58
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
02/08/2018

Project Number:

GEO / 27736

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

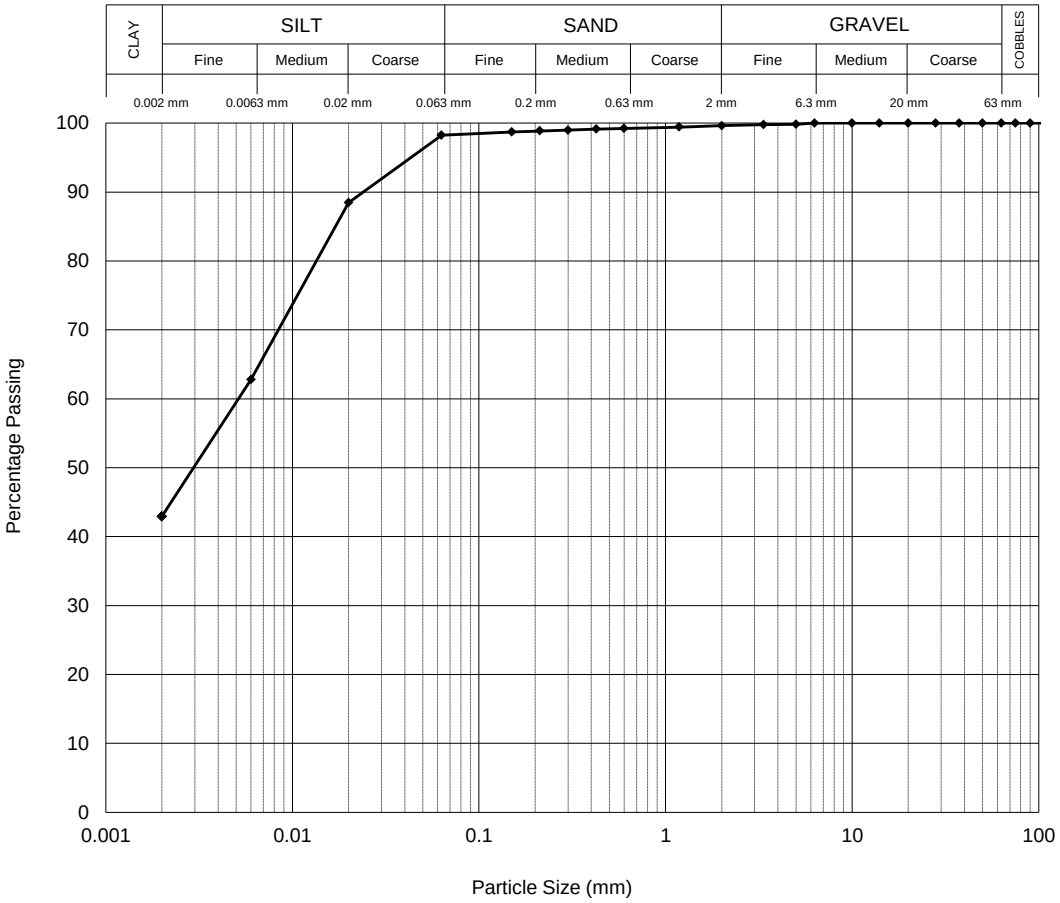
BH / TP No.	GT6
Sample Ref	D1L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	63
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
02/08/2018

Project Number:

GEO / 27736

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13064

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	5 Jul-18
Date of receipt of testing instructions	5 Jul-18
Date testing started:	6 Jul-18
Date of issue:	5 Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
G2 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.0	100	49	23	26		
G3 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.8	97	50	20	30		
G4 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	51	21	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		G2L2		Dark grey silty CLAY with rare fossil fragments.	2.70	2
GT5		G4L2		Dark grey CLAY and SILT with rare fossil fragments.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27765

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

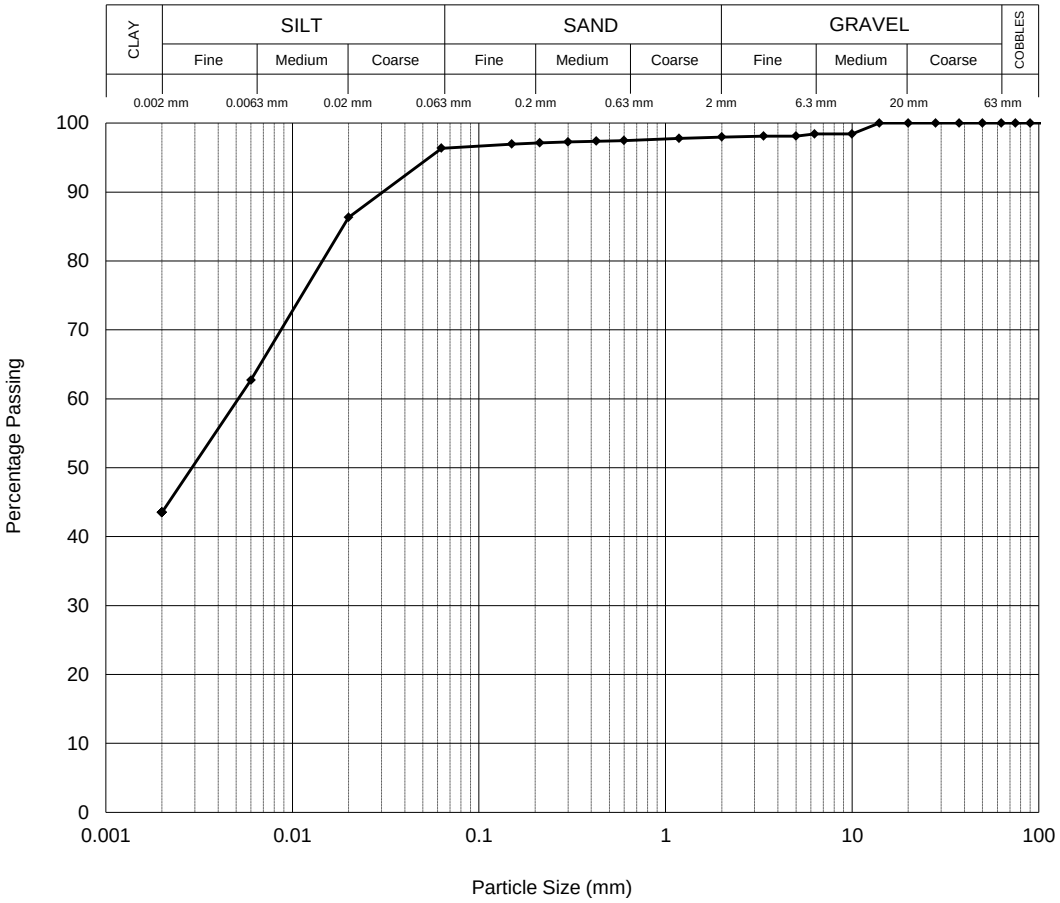
BH / TP No.	GT3
Sample Ref	G2L2

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	98
1.18 mm	98
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	44
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	2
Sand	2
Silt	53
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27765

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

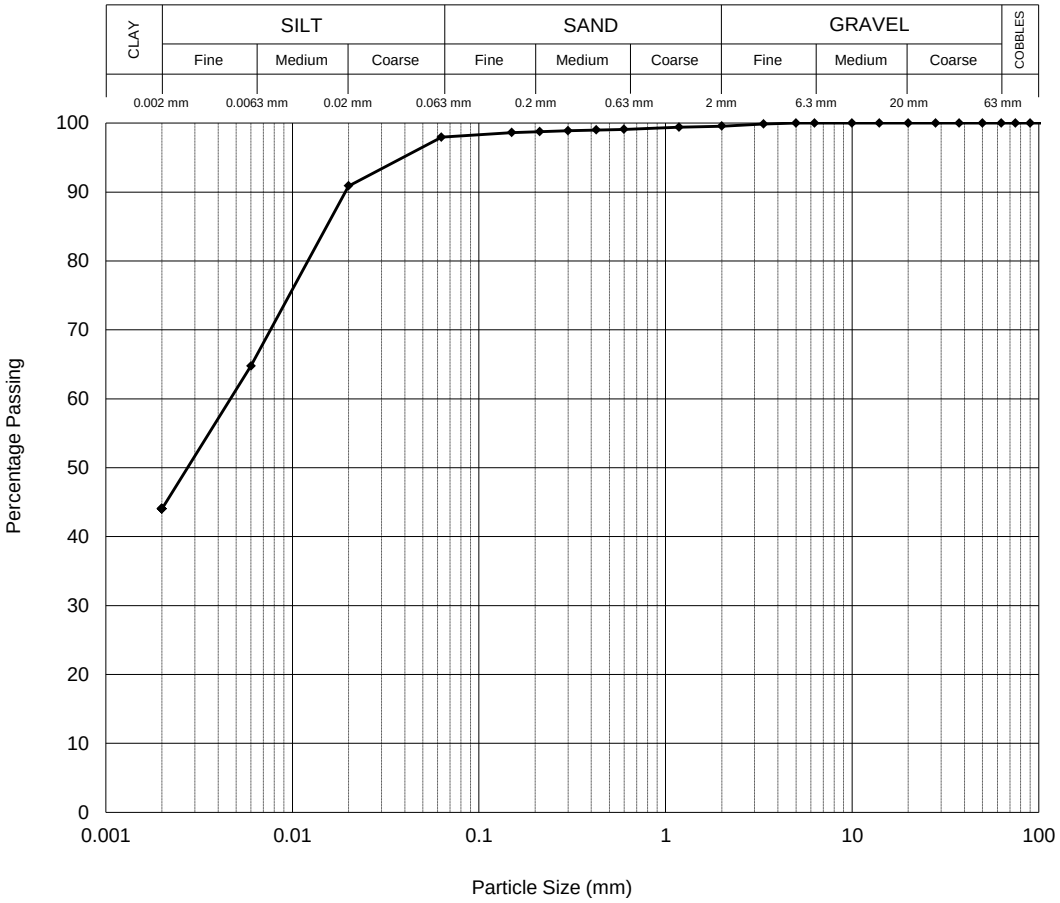
BH / TP No.	GT5
Sample Ref	G4L2

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	91
6 µm	65
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27765

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-9	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.6	100	48	20	28		
E3 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	47	21	26		
E4 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	50	21	29		
E5 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.3	100	47	21	26		
F1 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT5		D4 L-9		Dark grey CLAY and SILT with rare fossil fragments.	2.70	2
GT7		F1L3		Dark grey CLAY and SILT with rare fossil fragments.	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

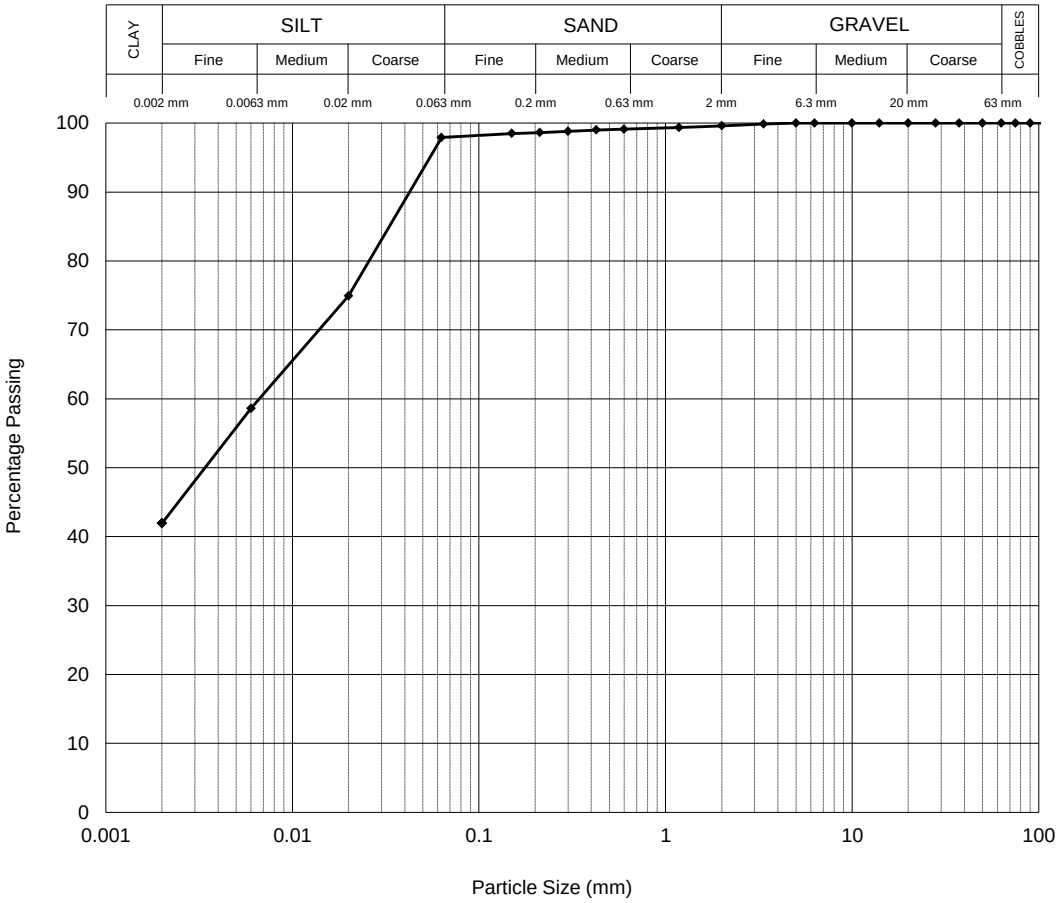
BH / TP No.	GT5
Sample Ref	D4 L-9

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	75
6 µm	59
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

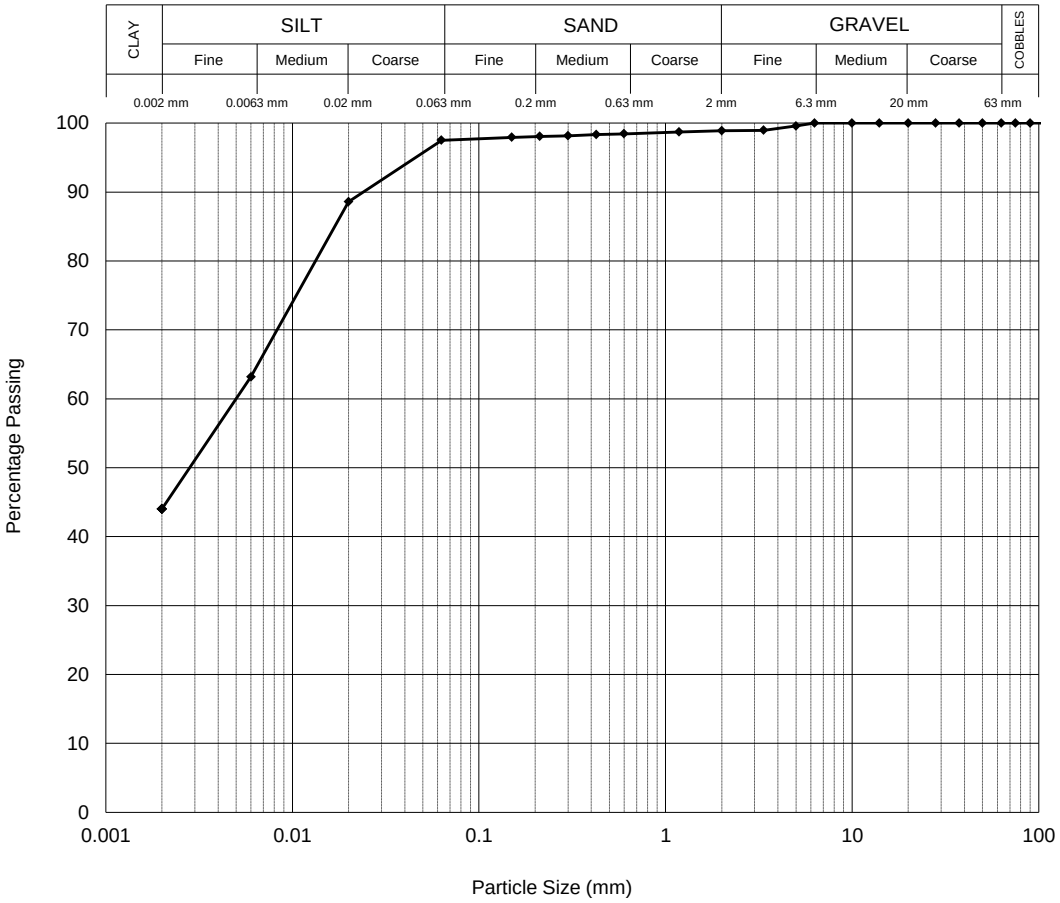
BH / TP No.	GT7
Sample Ref	F1L3

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	63
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13151

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	2	Aug-18
Date of receipt of testing instructions	2	Aug-18
Date testing started:	6	Aug-18
Date of issue:	2	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B2 L7	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.0	100	47	22	25		
B3 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.4	99	47	21	26		
C4 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		B3L2	B	Dark grey clayey SILT	2.69	2
GT5		C4L2	B	Dark grey clayey SILT	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
29/08/2018

Project Number:

GEO / 27870

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

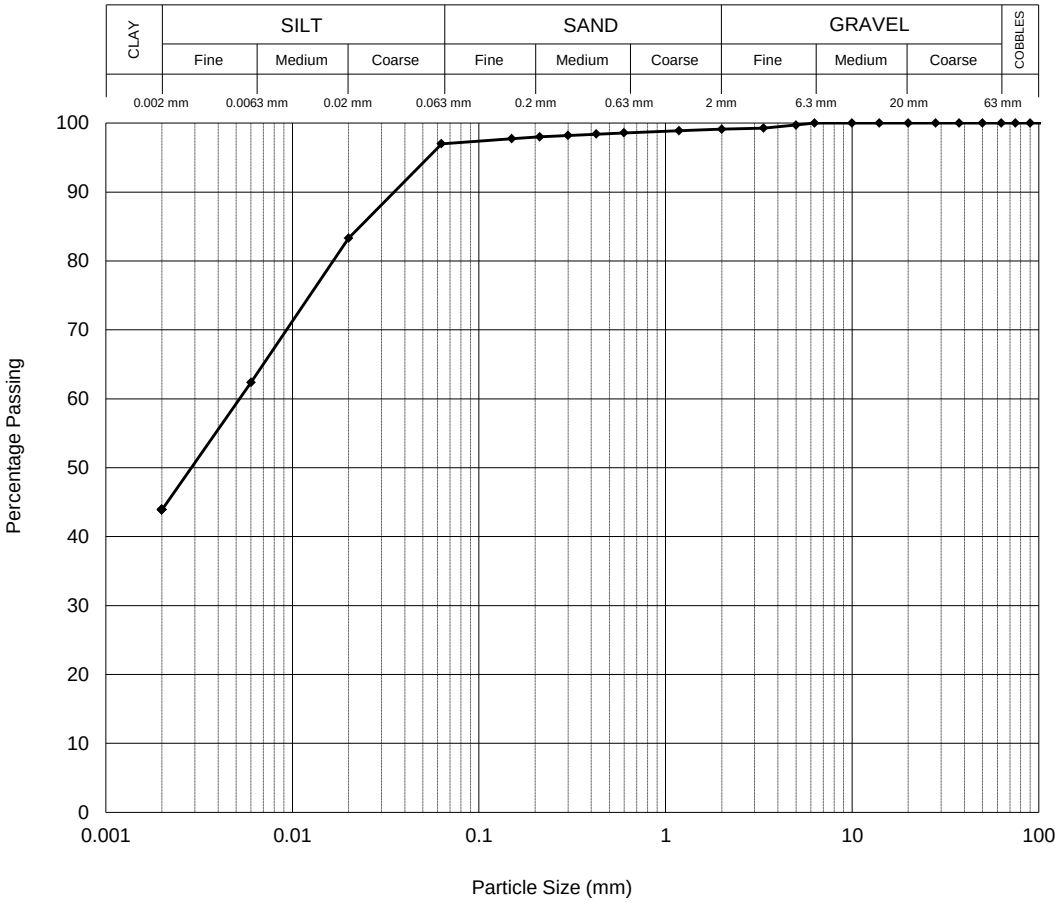
BH / TP No.	GT1
Sample Ref	B3L2
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	62
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	53
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
29/08/2018

Project Number:

GEO / 27870

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

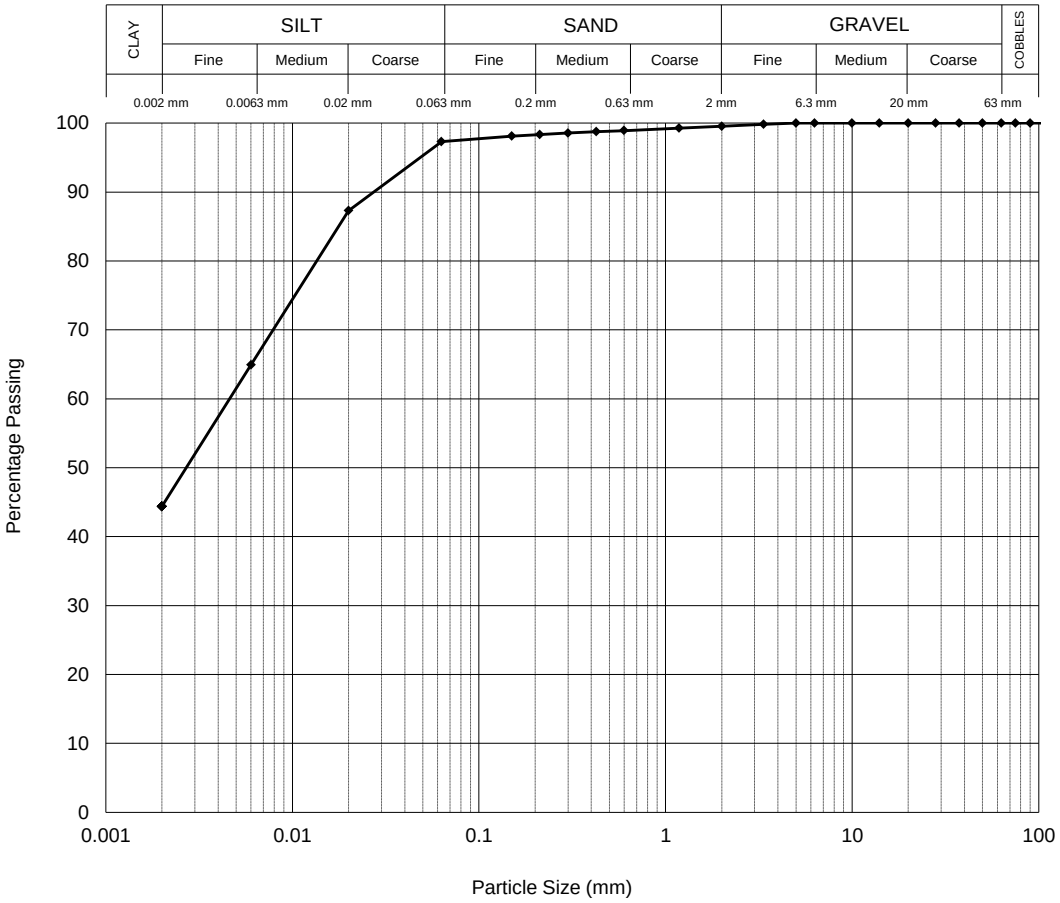
BH / TP No.	GT5
Sample Ref	C4L2
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
2 µm	44
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	53
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
29/08/2018

Project Number:

GEO / 27870

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C3 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	22	26		
G4 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.7	100	50	22	28		
G5 L5	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	97	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
F2 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	48	21	27		
F3 L6	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	47	21	26		
G2 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	49	22	27		
G3 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
E1 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	47	22	25		
F4 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	49	21	28		
G4 L7	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13174

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	8	Aug-18
Date of receipt of testing instructions	8	Aug-18
Date testing started:	10	Aug-18
Date of issue:	4	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
E1 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	47	22	25		
F4 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	49	21	28		
G4 L7	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		F4L6	B	Dark grey silty CLAY	2.73	2
GT2		G4L7	B	Dark grey silty CLAY	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
03/09/2018

Project Number:

GEO / 27927

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

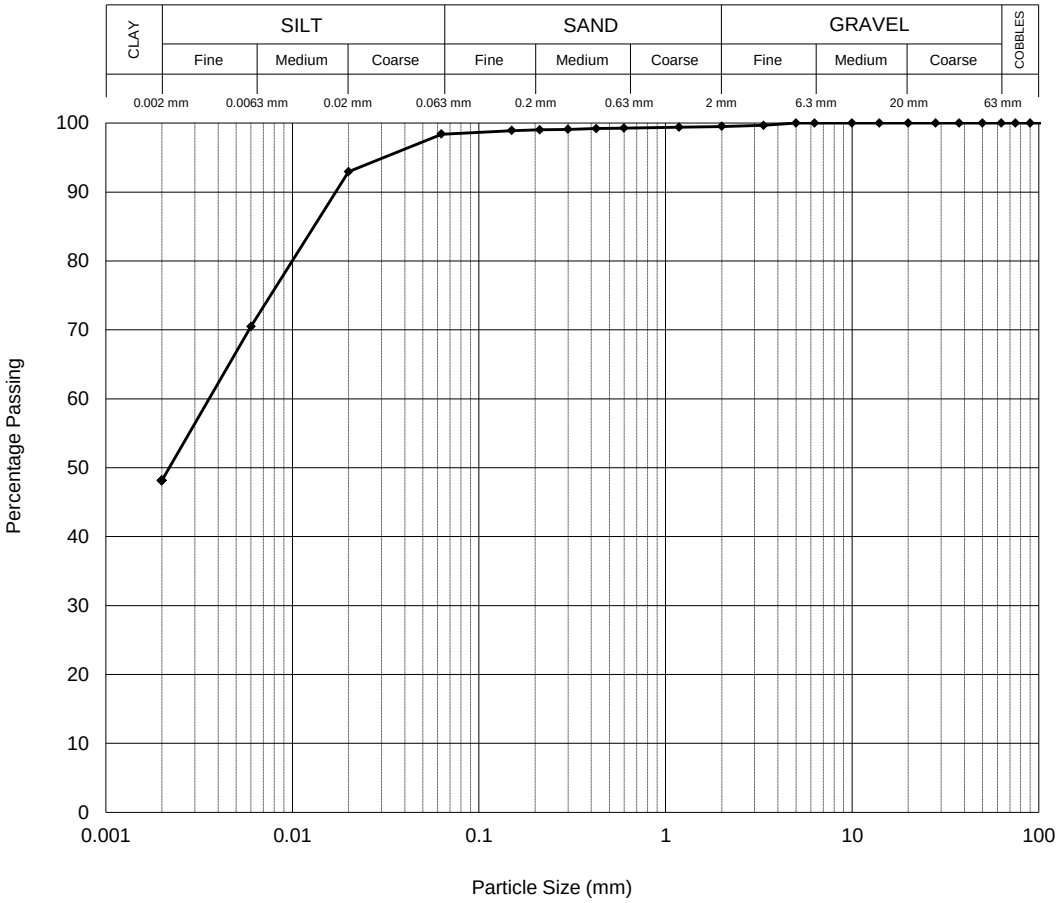
BH / TP No.	GT1
Sample Ref	F4L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	93
6 µm	70
2 µm	48

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	50
Clay	49

Checked and Approved by

S Burke

S Burke - Senior Technician
03/09/2018

Project Number:

GEO / 27927

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

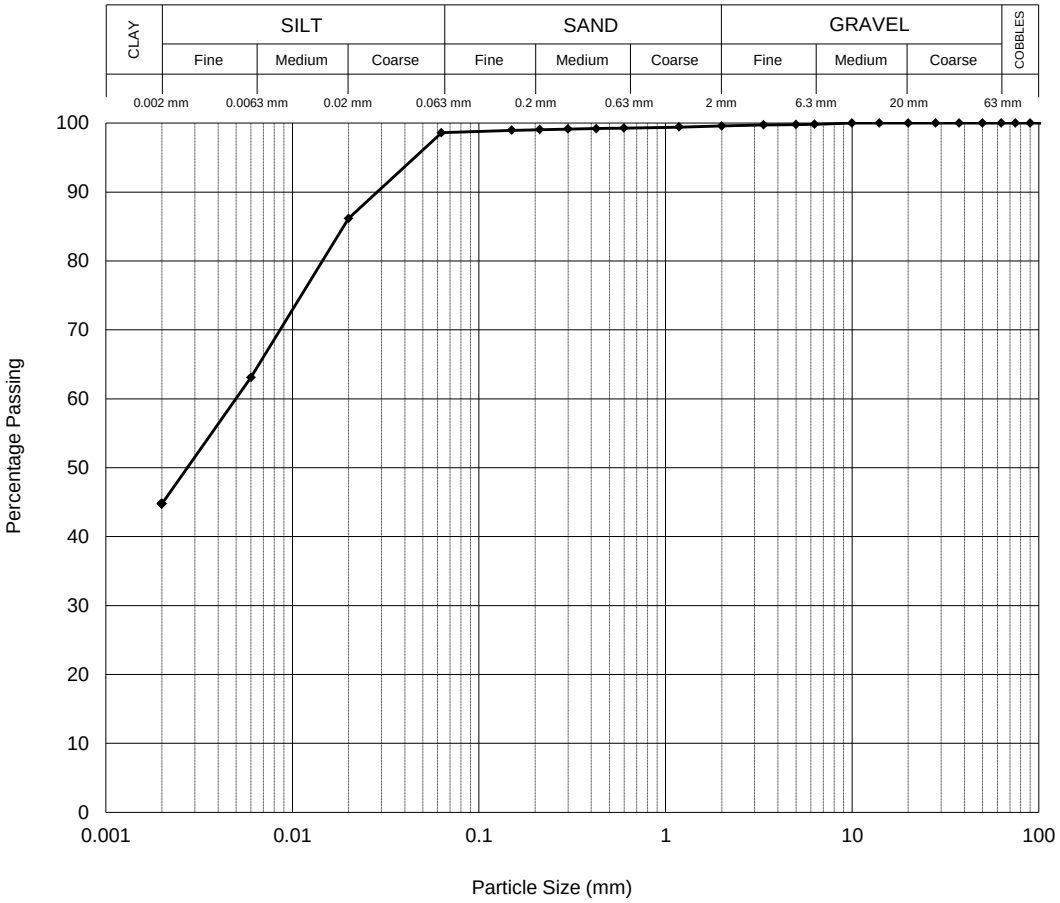
BH / TP No.	GT2
Sample Ref	G4L7
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	45
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
03/09/2018

Project Number:

GEO / 27927

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
E2 L6	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	49	21	28		
E3 L6	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	48	22	26		
E4 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	49	22	27		
E5 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.3	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13179

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	9	Aug-18
Date of receipt of testing instructions	9	Aug-18
Date testing started:	10	Aug-18
Date of issue:	5	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
E2 L6	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	49	21	28		
E3 L6	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	48	22	26		
E4 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	49	22	27		
E5 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.3	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		E5L6	B	Dark grey silty CLAY	2.71	2
GT4		E4L6	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27928

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

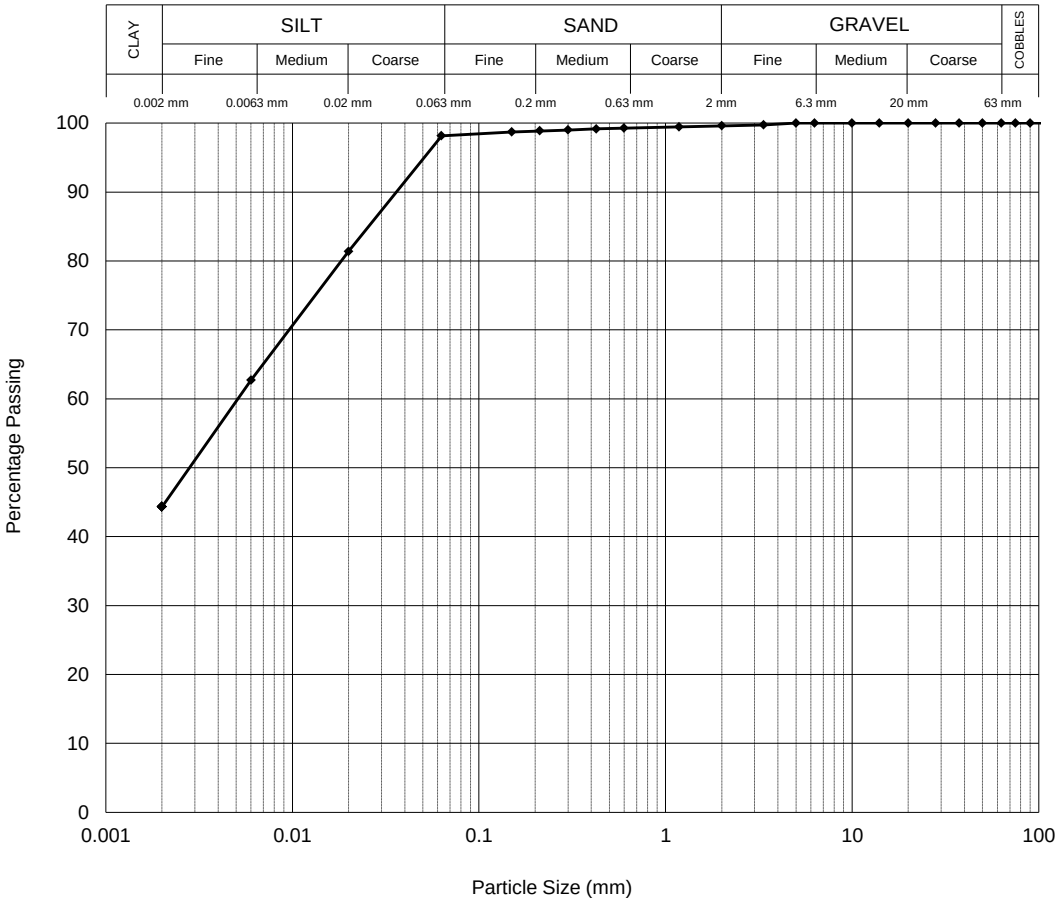
BH / TP No.	GT2
Sample Ref	E5L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	63
2 µm	44
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27928

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

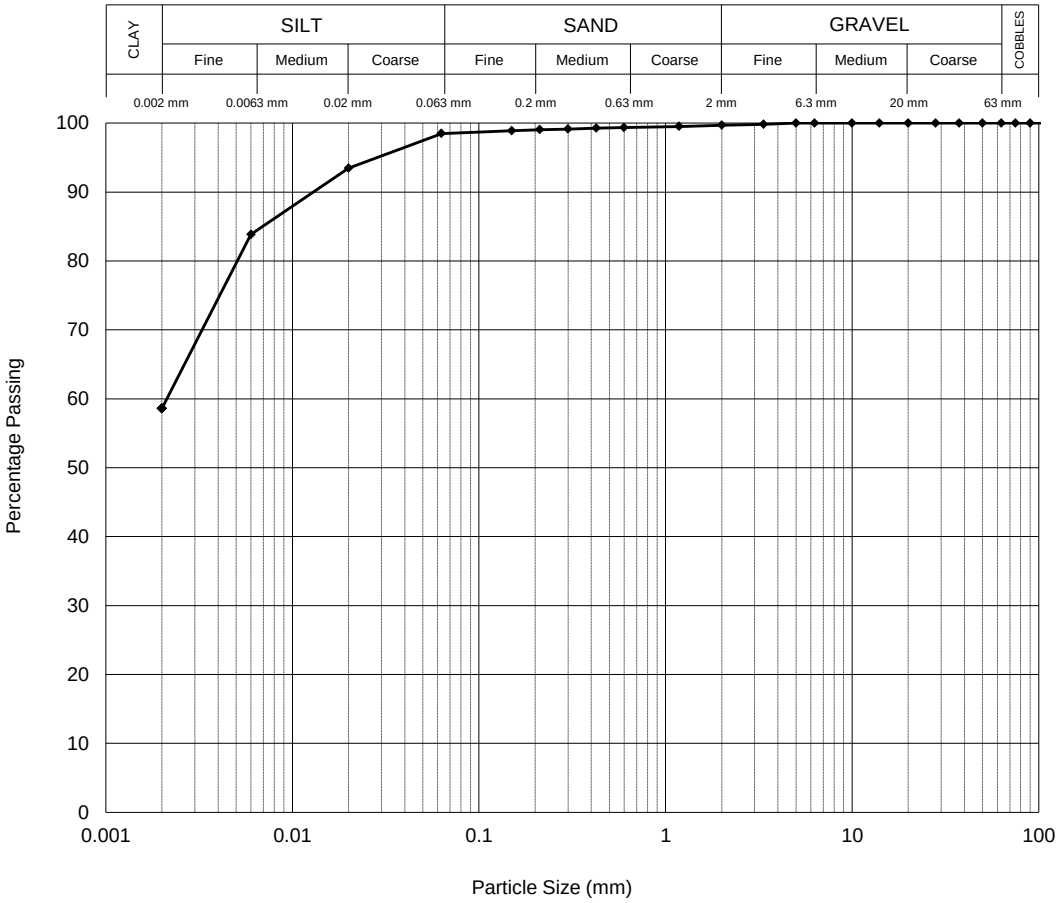
BH / TP No.	GT4
Sample Ref	E4L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	93
6 µm	84
2 µm	59

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	40
Clay	59

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27928

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	48	22	26		
B1 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.4	100	47	21	26		
E1 L7	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13185

Number of samples submitted for testing:	3	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Date (s) sampled and received at laboratory:	15	Aug-18
Date of receipt of testing instructions	15	Aug-18
Date testing started:	16	Aug-18
Date of issue:	2	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C1 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.7	100	46	21	25		
D1 L5A	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	100	45	21	24		
D1 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
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Date Printed	Approved By	Table
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		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	46	21	25		
C1 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	46	22	24		
D1 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
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Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C2 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	45	22	23		
D2 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	45	22	23		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
09/02/2018 00:00		1
		sheet 1

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 7 – Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Wednesday 05 September 2018 no rain this week (from adjacent to sockpile at Grid B4)



Leachate build-up Monday 03 September 2018 (Grid C1)



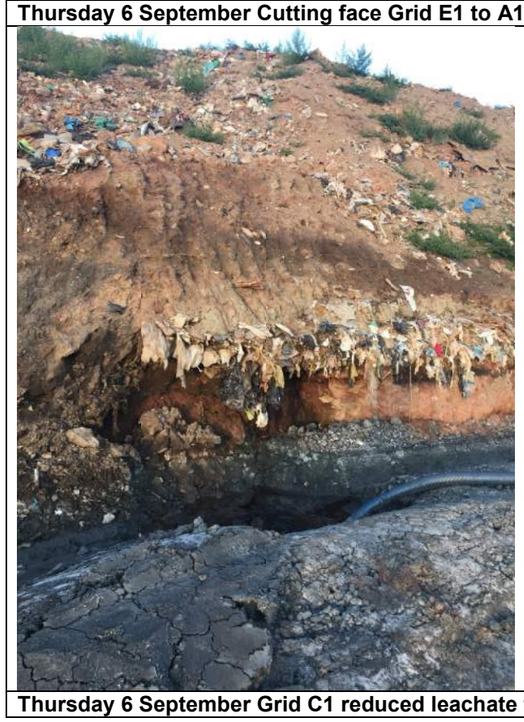
Friday 7 September 2018 Grid D3L3 Core cutter reinstatement

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Thursday 6 September Cutting face Grid E1 to A1. Perched leachate level at Grid C1 and top of tip surface liner surface water outfall at Gird A1



Thursday 6 September Grid C1 reduced leachate flow



Thursday 6 September from Grid C1

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
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Casnewydd

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 13 WE 16/09/18

Streetscene
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Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 16-09-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		16-09-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Contents

1.0 Introduction

2.0 Weather

3.0 Progress For the Week

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3.2 Work – progress
3.3 Layer 1
3.4 Layer 2
3.5 Layer 3
3.6 Layer 4

4.0 Testing

4.1 Core Cutter Samples
4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

1. Progression Plan
2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Casnewydd

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

No rain over the weekend, Monday, Wednesday, Thursday fine and sunny. Tuesday rain

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile is generally good. Some delay with delivery of clay has been experienced, as material is being deposited closer to the stockpile it is being installed quicker and more material can be laid.

Up to the 12 September 2018, 44,218 tonnes of material was delivered to site.
The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B3L4, B4L4, B5L4, C3L5, C4L5, C5L5, D2L9, and D3L4

Testing by CJ Associates was not undertaken Monday, Tuesday and Thursday due to lack of clay deliveries Monday and rain on Tuesday delaying progress.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

Two 10-ton front loader, 1 excavators, dozer, roller and bowser were on site.

Clay deliveries increased this week and the stockpile was re-established.

3.3a Additional Layers
No work undertaken

3.3b Levelling the Area
No work undertaken

3.3 Layer 1
No work undertaken

3.4 Layer 2
No work undertaken

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3.5 Layer 3
No work undertaken
3.6 Layer 4
B3L4, B4L4, B5L4, D3L4
3.7 Layer 5
C3L5, C4L5, C5L5
3.8 Layer +6
D2L9
4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

6 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
6 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

One sample and one spare were taken at D3L5 on 13 September 2018.
No results have been received this week.

4.3 MC and PI,

Details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 95KN/ m^2 recorded.

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5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor pumped out the adjacent cell Wednesday 12 September 2018 for a short time, following the removal of a tanker of leachate, there was no noticeable reduction in leachate flowing into the cell 4 site.
Some weathering of the cut face surface has been noted.

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
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Appendix 1 - Progression Plan

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D&MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1		L2A		L2B		L2				L3		L4				L5		L5A		L6		L7		L8		L9		L10	
	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd

Date																														
A2																														
Date																														
A3																														
Date																														
B1	MC&PI/D S&D/ D&MC	P Sh-125 P-PI 03/09/18	MC&P I/DS& D/D& MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/ D&MC	P Sh-150			MC&PI/ D&MC	P-Sh-90																		
Date	T- 13/06/18	P 15/08/18	T- 14/0 6/18	P 15/08/18 P-PI 03/09/18 P-DS&D 31/08/18	T- 16/06/ 18	N/A B1L2	T- 16/06/18	P 20/08/18 P-PI 03/09/18			T- 04/09/18	P- 06/09/18 P-PI 15/09/18																		
B2	MC&PI/D &MC	P Sh-max					MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120			MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96	MC&PI/ DS&D/D& MC And S	P Sh-115	MC&PI/ DS&D/D& MC And S	P Sh-122	MC&PI/D &MC And S	P-Sh-125
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P- 03/08/ 18 P-PI 03/09/ 18	T 23/08/ 18	P 24/08/ 18 P-PI 15/09/ 18	T 24/08/ 18	P 28/08/ 18 P-PI 15/09/ 18	T 04/09/ 18	P- 06/09/ 18 P-PI 15/09/ 18
B3	MC&PI/D S&D/D&M C	P Sh-70					MC&PI/D S&D/D&M C	P Sh-105			MC&PI/D S&D/D&M C	P Sh-94	MC&PI/D S&D/D&M C	P Sh-95																
Date	T- 19/06/18	P 20/07/18 F-PI Moistur 08/08/18 P- DS 24/08/18					T- 02/08/18	P 03/08/18 P-PI 03/08/18 P-DS&D 03/09/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18	T- 12/09/18	P 13/09/18																
B4	MC&PI/D &MC	P Sh-86					D&MC	P S-100			MC&PI/D S&D/D&M C	P Sh-75	MC&PI /D&MC	P Sh-140																
Date	T- 19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18	T- 12/09/18	P 13/09/18																
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2	N/A C5L4	N/A C5L4	N/A B4L3	N/A B4L3	N/A B4L4	N/A B4L4																
Date	T- 19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2	N/A 23/08/18	N/A 24/08/18	N/A B4L3	N/A B4L3	N/A B4L4 12/09/18	N/A B4L4 13/09/18																
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120			MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/ D&MC	P Sh-89	MC&PI/ DS&D/D &MC	P Sh-125						
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18						
C2	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	P Sh -122			MC&PI/**D&S**/ D&MC And S	Sh-106			MC&PI/ **DS&D**/ D&MC And S	Sh-80	MC&PI/ **DS&D**/ D&MC And S	Sh-145	MC&P I/D& MC	P-116	MC&PI/ DS&D/D& MC And S	P-Sh-150		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18 P-PI 03/09/ 18	T- 28/07/ 18	P- 29/0818 P-PI 15/09/18	T 04/09/ 18	P- 06/09/ 18 P-PI 15/09/ 18		
C3	MC&PI/ **D&S**/D &MC	P Sh- 128					MC&PI/ **D&S**/D &MC	P Sh- 80			MC&PI/ **D&S**/D &MC	P Sh- 150	MC&PI/ **D&S**/D &MC	P Sh- 88			MC&PI/ D&MC	P Sh- 122												
Date	T- 19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T- 02/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T- 30/08/18	P 03/09/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18												
C4	MC&PI/D S&D/D&M C	Sh- 115					MC&PI/D S&D/D&M C	P Sh- 124			MC&PI/ D&MC	P Sh- 100	MC&PI/ D&MC And S	P Sh-150			MC&PI/ DS&D/D &MC	P Sh- 128												
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T- 02/08/18	P 03/08/18 P-PI 03/09/18 P-DS&D 03/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 28/08/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18												
C5	MC&PI/D &MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100			MC&PI/ D&MC	P Sh- 95												
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 24/08/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18												

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

D1	MC&PI/D &MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/**D& DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max	MC&PI/D S&D/D& MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125						
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18 P-DS&D 06/09/18	T-14/08/18	P 16/08/18 P-PI 03/09/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18						
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D& DS**/ D&MC And S	P Sh-122			MC&PI/**D& DS**/ D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122	MC&PI/ **DS&D/** D&MC And S	Sh-78	MC&PI/ **DS&D/** D&MC And S	Sh-121		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18 P-PI 03/09/ 18	T 06/09/ 18	P 07/09/ 18	T 10/09/ 18	P 13/09/ 18		
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58					MC&PI/ **D&S**/D &MC	P Sh- 106			MC&PI/ **D&S**/D &MC	P Sh- 64	MC&PI/ **D&S**/D &MC	P Sh-																
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18					T- 03/09/18	P 04/09/18 P-PI 15/09/18			T- 07/09/18	P 10/09/18	T- 14/09/18	Need Core																
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S** /D&MC And S	P Sh-70			MC&PI/ D&MC	P Sh- 80																		
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	P- 04/09/18 P-PI 15/09/18			T- 07/09/18	P 10/09/18																		
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142																						
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818 P-PI 15/09/18																						
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132						
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18	T- 14/08/18	P 16/08/18 P-PI 03/09/18						
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110								
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D/**D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P- DS&D 06/09/18								
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **DS&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6								
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18 P-DS&D 06/09/18					T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18 P- DS&D**S** 31/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6								
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D/** D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78								

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd

Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78							
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 06/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122							
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6							
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18							
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI				N/A G2L6	N/A G2L6							
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6							
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135							
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18							
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125							
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18							
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90					
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18	T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18					
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7							
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18			T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 13/09/18							

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Streetscene
Y-Strydynun

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Newport/Casnewydd
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NP20 4UR

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Casnewydd

Permeability

Grid Ref	Result – K_y at 20°C	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1	$1.4x10^{-10}$m/s $9.6x10^{-11}$m/s	19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3	$9.7x10^{-11}$m/s	22/06/18		P 31/08/18
D2-L4	$6.8x10^{-10}$m/s	27/06/18		P 31/08/18
F3-L1	$1.6x10^{-10}$m/s	04/07/18		P 31/08/18
F4-L2		05/07/18		
D4L-9	$1.1x10^{-10}$m/s	10/07/18		P 06/09/18
E5-L2		12/07/18		
E3-L3	$1.2x10^{-10}$m/s	18/07/18		P 31/08/18
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5		26/07/18		
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		
C2-L7		20/08/18		
D2L8		06/09/18		
C3L5		13/09/18		

Streetscene
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Bund

Layer	Ref	Date	Pass/Fail

Streetscene
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Appendix 2 - Test Results - Permeability Tests

Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1580**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**12/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B3-L4-C1	Core 2 B4-L4-C1	Core 3 D2-L9-C1		
Bulk Density	2.03	2.05	2.07		
Moisture Content	23	22	22		
Dry Density	1.65	1.69	1.70		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.4	2.1	1.2		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 13/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1614**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**14/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L5-C1	Core 2 C4-L5-C1	Core 3 C5-L5-C1		
Bulk Density	2.00	2.05	2.04		
Moisture Content	25	22	23		
Dry Density	1.60	1.67	1.67		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.8	1.3	1.6		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 16/09/2018	Fig

Streetscene
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Appendix 4 – Field Logs

Available on request

Streetscene
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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1581	B3-L4 12.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	95	
1582	B3-L4 12.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	132	
1583	B3-L4 12.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1584	B4-L4 12.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1585	B4-L4 12.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	140	
1586	B4-L4 12.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1587	D2-L9 12.09.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1588	D2-L9 12.09.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	132	
1589	D2-L9 12.09.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	121	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	13/09/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1615	C3-L5 14.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1616	C3-L5 14.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
1617	C3-L5 14.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	124	
1618	C4-L5 14.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1619	C4-L5 14.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	128	
1620	C4-L5 14.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1621	C5-L5 14.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1622	C5-L5 14.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	95	
1623	C5-L5 14.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	16/09/2018	
		R Anstee, Materials and Field Testing Director		

Streetscene
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NP20 4UR

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Appendix 6 – PI, PL, MC, LL Results

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13162

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	3	test(s)
Grading	3	test(s)
Date (s) sampled and received at laboratory:	3	Aug-18
Date of receipt of testing instructions	3	Aug-18
Date testing started:	6	Aug-18
Date of issue:	12	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C3 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	22	26		
G4 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.7	100	50	22	28		
G5 L5	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	97	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		G4L6	B	Dark grey silty CLAY	2.68	2
GT3		G5L5	B	Dark grey silty CLAY	2.70	2
GT4		C3L2	B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

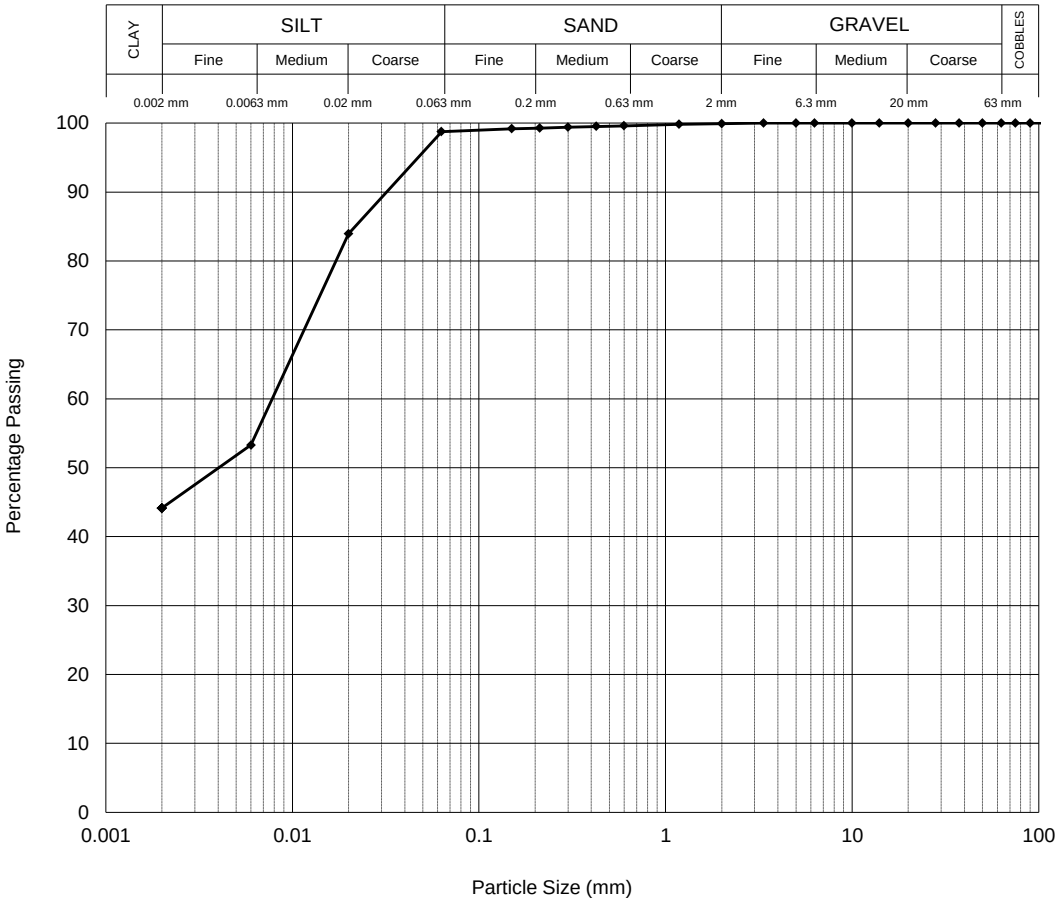
BH / TP No.	GT1
Sample Ref	G4L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	53
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

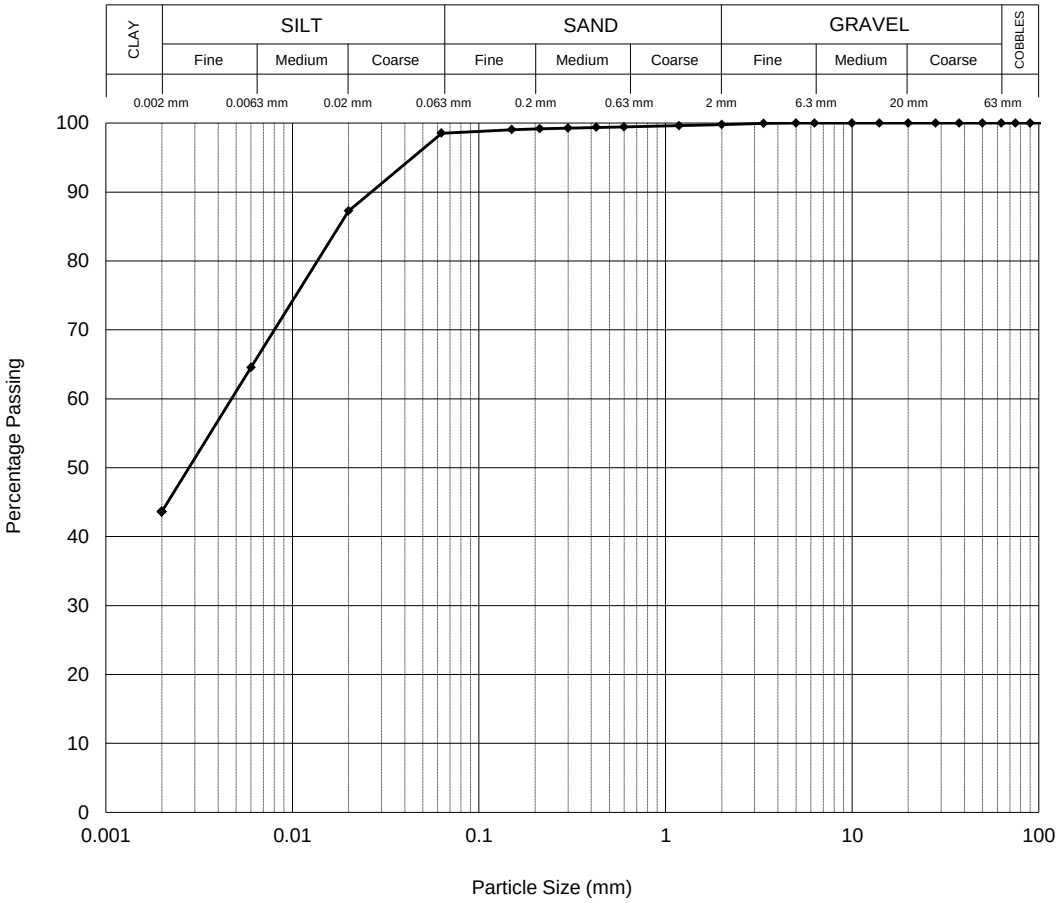
BH / TP No.	GT3
Sample Ref	G5L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

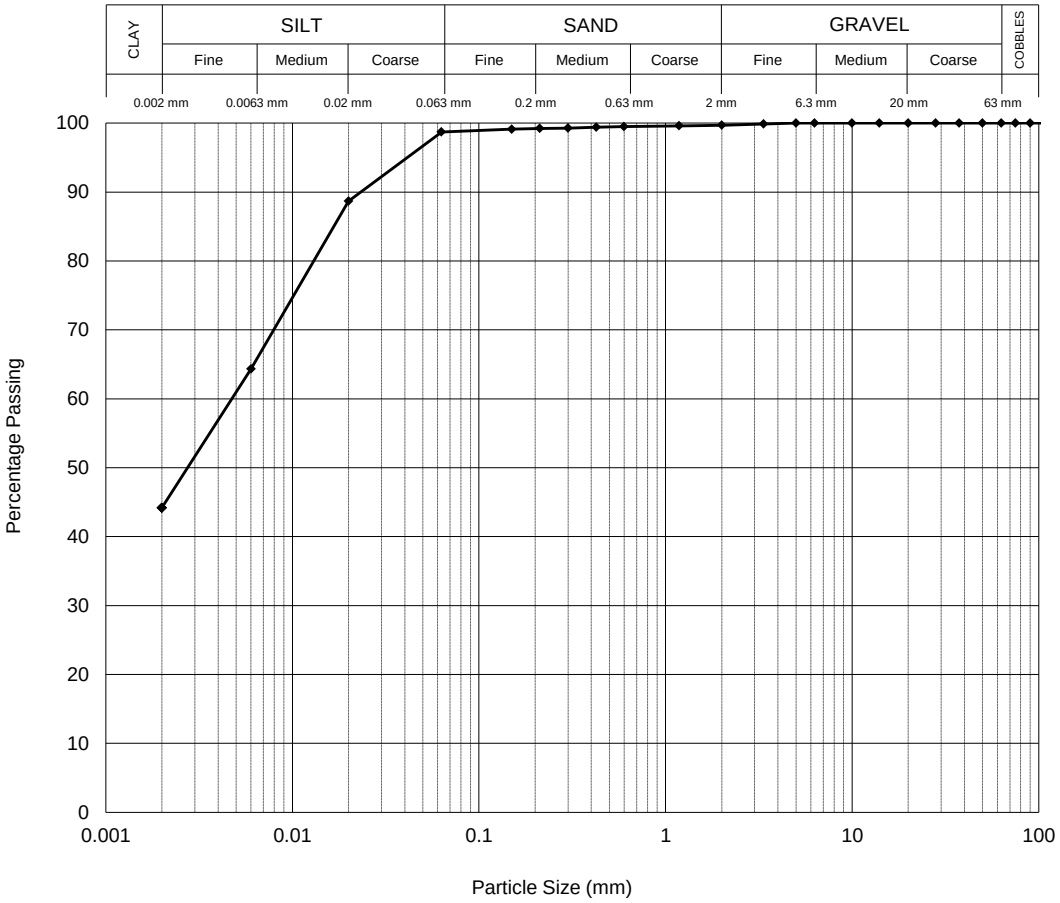
BH / TP No.	GT4
Sample Ref	C3L2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	64
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m3	Density dry Mg/m3	w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
B3 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	46	20	26		
B4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	46	21	25		
C3 L3	GT8	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.7	100	47	21	26		
C4 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	49	20	29		
C5 L3	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B2 L8	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	45	20	25		
C4 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.4	100	46	21	25		
C5 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B2 L9	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.7	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13226

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Date (s) sampled and received at laboratory:	29	Aug-18
Date of receipt of testing instructions	29	Aug-18
Date testing started:	30	Aug-18
Date of issue:	15	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C2 L8	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	45	21	24		
D5 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C3 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			16.3	100	48	22	26		
D4 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	45	20	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
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Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D3 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
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15/09/2018	Lisa Maiden	1
		sheet 1

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	48	21	27		
B2 L10	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	46	20	26		
C2 L9	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.6	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

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		sheet 1

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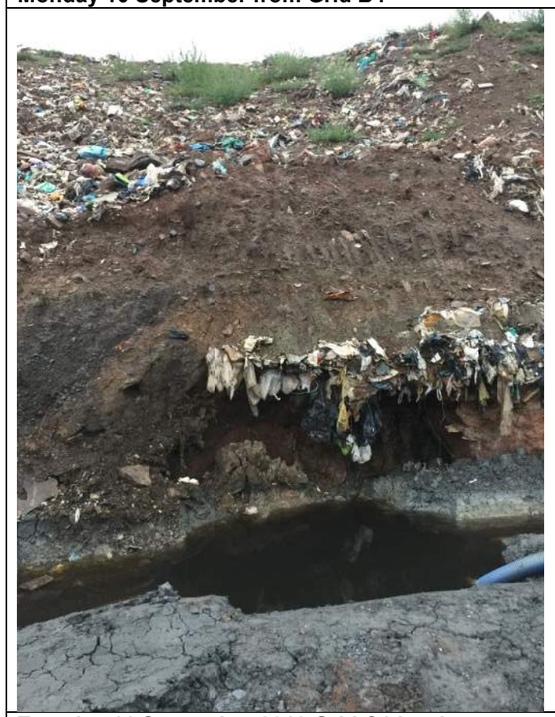
Appendix 7 – Photographs

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Monday 10 September from Grid B4



Tuesday 11 September 2018 Grid C1 leachate



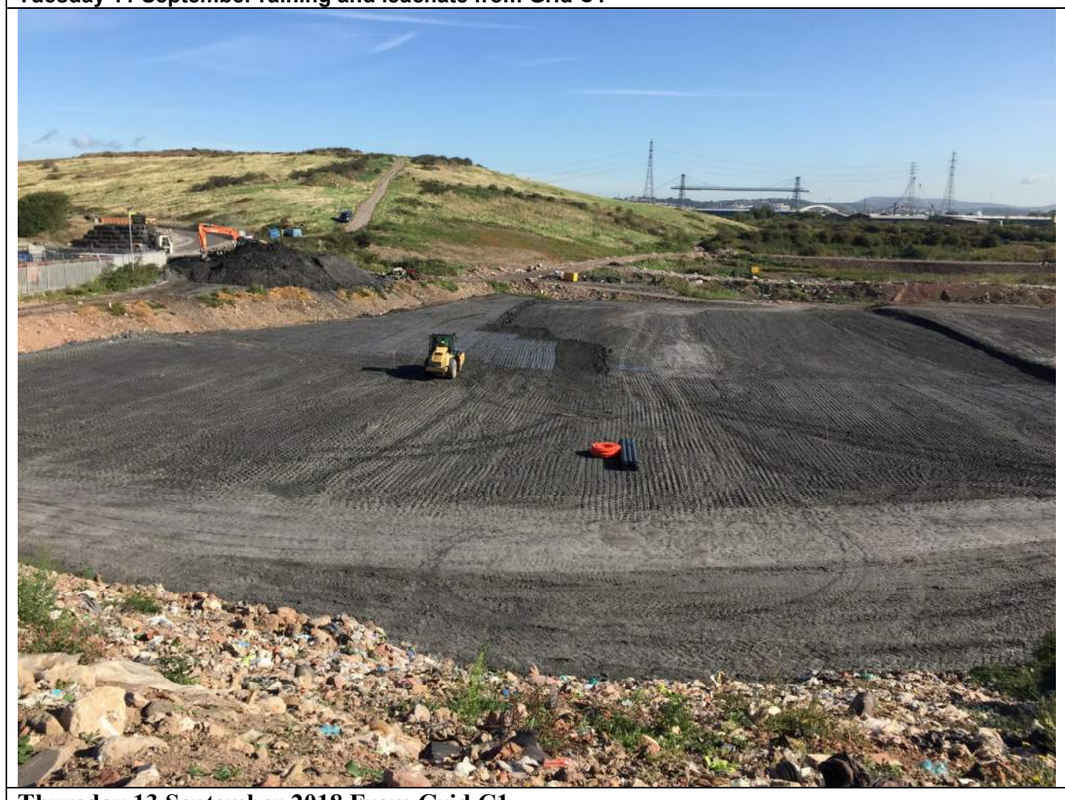
Thursday 14 September 2018 Grid C1 leachate

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Tuesday 11 September raining and leachate from Grid C1



Thursday 13 September 2018 From Grid C1

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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 14 WE 23/09/18

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Project Ref: 2506
Date: 23-09-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		23-09-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved
1	26-09-18	Section 5, 6 and Appendix 1 Permeability updated	William Watt		

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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Rain over the weekend delayed progress Monday Am. Monday overcast no rain, Tuesday showers in the am. Wednesday fine. Thursday rain no access to base. Friday fine, water on base prevented laying clay, work on cross drains installation continued.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile is good with a stockpile established.

Up to the 20 September 2018, 47,085 tonnes of material was delivered to site.
The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B3L5, B4L5, B5L5, D3L5, D4L5 and D5L4

Testing by CJ Associates was not undertaken Tuesday, Thursday and Friday due to rain delaying progress.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

Two 10-ton front loader, 2 excavators, dozer, roller and bowser were on site.

3.3a Additional Layers
No work undertaken

3.3b Levelling the Area
Topping up to level areas was undertaken in B2, C2, D1, D2

3.3 Layer 1
No work undertaken

3.4 Layer 2
No work undertaken

3.5 Layer 3
D5L3

3.6 Layer 4

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D4L4, D5L4

3.7 Layer 5

B3L5, B4L5, B5L5, D3L5, D4L5,

3.8 Layer +6

No work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

6 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
6 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

No samples or one spares were taken this week.
Results have been received and are shown in the appendices.

4.3 MC and PI,

Details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 104KN/ m^2 recorded.

5.0 Results Summary

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All test results were passed.
Permeability results received were miss named as recorded within the Appendix 1 Progress Plan

6.0 Problems Encountered

Permeability test results for F4L2 were miss named by the lab. The correct details are shown in the Progress Plan.

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor pumped out the adjacent cell Wednesday 19 September 2018 a full tanker of leachate was removed, there was no noticeable reduction in leachate flowing into the cell 4 site.
Some weathering of the cut face surface has been noted.

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D&MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1		L2A		L2B		L2				L3		L4				L5		L5A		L6		L7		L8		L9		L10	
	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														

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Date																													
A2																													
Date																													
A3																													
Date																													
B1	MC&PI/D S&D/ D&MC	P Sh-125 P-PI 03/09/18 P- DS&D 19/09/18	MC&PI/DS&D/D&MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/ D&MC	P Sh-150			MC&PI/ D&MC	P-Sh-90																	
Date	T- 13/06/18	P 15/08/18	T- 14/06/18	P 15/08/18 P-PI 03/09/18 P-DS&D 31/08/18	T- 16/06/18	N/A B1L2	T- 16/06/18	P 20/08/18 P-PI 03/09/18 P-DS&D 19/09/18			T- 04/09/18	P- 06/09/18 P-PI 15/09/18																	
B2	MC&PI/D &MC	P Sh-max					MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120			MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96	MC&PI/ DS&D/D&MC And S	P Sh-115	MC&PI/ DS&D/D&MC And S	P Sh-122	MC&PI/D &MC And S	P-Sh-125
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P- 03/08/18 P-PI 03/09/18	T 23/08/18	P 24/08/18 P-PI 15/09/18	T 24/08/18	P 28/08/18 P-PI 15/09/18	T 04/09/18	P- 06/09/18 P-PI 15/09/18
B3	MC&PI/D S&D/D&MC	P Sh-70					MC&PI/D S&D/D&MC	P Sh-105			MC&PI/D S&D/D&MC	P Sh-94	MC&PI/D S&D/D&MC	P Sh-95			MC&PI/D S&D/D&MC	P Sh-105											
Date	T- 19/06/18	P 20/07/18 F-PI Moistur 08/08/18 P- DS 24/08/18					T- 02/08/18	P 03/08/18 P-PI 03/08/18 P-DS&D 03/09/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18	T- 12/09/18	P 13/09/18			T- 19/09/18	P 20/09/18											
B4	MC&PI/D &MC	P Sh-86					D&MC	P S-100			MC&PI/D S&D/D&MC	P Sh-75	MC&PI /D&MC	P Sh-140			MC&PI/ DS&D/D&MC	P Sh-150											
Date	T- 19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18	T- 12/09/18	P 13/09/18			T- 19/09/18	P 20/09/18											
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2	N/A C5L4	N/A C5L4	N/A B4L3	N/A B4L3	N/A B4L4	N/A B4L4															
Date	T- 19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2	N/A 23/08/18	N/A 24/08/18	N/A B4L3	N/A B4L3	N/A B4L4 12/09/18	N/A B4L4 13/09/18															
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120			MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/ D&MC	P Sh-89	MC&PI/ DS&D/D &MC	P Sh-125					
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18					
C2	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D&DS**/ D&MC And S	Sh-106			MC&PI/ **DS&D**/ D&MC And S	Sh-80	MC&PI/ **DS&D**/ D&MC And S	Sh-145	MC&PI/D&MC	P-116	MC&PI/ DS&D/D&MC And S	P-Sh-150		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18	T- 28/07/18	P- 29/0818 P-PI 15/09/18	T 04/09/18	P- 06/09/18 P-PI 15/09/18		
C3	MC&PI/ **D&S**/D &MC	P Sh- 128					MC&PI/ **D&S**/D &MC	P Sh- 80			MC&PI/ **D&S**/D &MC	P Sh- 150	MC&PI/ **D&S**/D &MC	P Sh- 88			MC&PI/ D&MC	P Sh- 122											
Date	T- 19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T- 02/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T- 30/08/18	P 03/09/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18											
C4	MC&PI/D S&D/D&MC	Sh- 115					MC&PI/D S&D/D&MC	P Sh- 124			MC&PI/ D&MC	P Sh- 100	MC&PI/ D&MC And S	P Sh-150			MC&PI/ DS&D/D &MC	P Sh- 128											
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T- 02/08/18	P 03/08/18 P-PI 03/09/18 P-DS&D 03/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 28/08/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18											
C5	MC&PI/D &MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100			MC&PI/ D&MC	P Sh- 95											
Date	T- 18/07/18	P 20/07/18 P-PI					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18 P-PI	T 23/08/18	P 24/08/18 P-PI			T- 13/09/18	P 17/09/18											

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		08/08/18										15/09/18		15/09/18														
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D&MC	P Sh-max	MC&PI/DS&D/D&MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D&MC	P Sh-125						
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18 P-DS&D 06/09/18	T-14/08/18	P 16/08/18 P-PI 03/09/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18						
D2	MC&PI/ **D&S**/D&MC	P Sh-120					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/**D&DS**/ D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122	MC&PI/ **DS&D/** D&MC And S	Sh-78	MC&PI/ **DS&D/** D&MC And S	Sh-121		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18	T 06/09/18	P 07/09/18	T 10/09/18	P 13/09/18		
D3	MC&PI/ **D&S**/D&MC/**P**	P Sh- 58					MC&PI/ **D&S**/D&MC	P Sh- 106			MC&PI/ **D&S**/D&MC	P Sh- 64	MC&PI/ **D&S**/D&MC	P Sh- 150			MC&PI/ D&MC	P Sh- 118											
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18					T- 03/09/18	P 04/09/18 P-PI 15/09/18			T- 07/09/18	P 10/09/18	T- 14/09/18	P-18/09/18			T- 19/09/18	P-20/09/18											
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S**/D&MC And S	P Sh-70			MC&PI/ D&MC	P Sh- 80	MC&PI/ D&MC	P Sh- 150			MC&PI/ D&MC	P Sh- 104											
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	P- 04/09/18 P-PI 15/09/18			T- 07/09/18	P 10/09/18	T- 17/09/18	P-18/09/18			T- 19/09/18	P-20/09/18											
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142			MC&PI/ D&MC	P Sh- 150	N/A D4/L5	N/A D4/L5															
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818 P-PI 15/09/18			T- 17/09/18	P-18/09/18	N/A D4/L5	N/A D4/L5															
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132						
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18	T- 14/08/18	P 16/08/18 P-PI 03/09/18 P-DS&D 19/09/18						
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D&MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D&MC	P Sh-88			MC&PI/ D&MC	P Sh-110								
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D&MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D&MC	P Sh-135			MC&PI/ DS&D/D&MC	P Sh-75			MC&PI/ D&MC	P Sh-78								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D&MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D&MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P- DS&D 06/09/18								
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D&MC	P S-110			MC&PI/ **DS&D**/D&MC	P Sh-98	MC&PI/ DS&D//D&MC	P Sh-118			MC&PI/ DS&D/D&MC	P Sh-92			MC&PI/ DS&D/D&MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F1	MC&PI/ **D&S**/D&MC	P Sh-max					MC&PI/ **DS&S**/D&MC	P Sh-124			MC&PI/ **D&S**/D&MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6								
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18 P-DS&D 06/09/18					T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18 P- DS&D**S** 31/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6								

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F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 06/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122								
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6								
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18								
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6								
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6								
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90						
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18	T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18						
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7								
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18			T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 13/09/18								

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

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Permeability

Grid Ref	Result – K_y at 20°C	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1	$1.4x10^{-10}$m/s $9.6x10^{-11}$m/s	19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3	$9.7x10^{-11}$m/s	22/06/18		P 31/08/18
D2-L4	$6.8x10^{-10}$m/s	27/06/18		P 31/08/18
F3-L1	$1.6x10^{-10}$m/s	04/07/18		P 31/08/18
F4-L2	$1.1x10^{-10}$m/s	05/07/18	Miss named E4L2	P 19/09/18
D4L-9	$1.1x10^{-10}$m/s	10/07/18		P 06/09/18
E5-L2	$3.0x10^{-11}$m/s	12/07/18		P 19/09/18
E3-L3	$1.2x10^{-10}$m/s	18/07/18		P 31/08/18
D3-L1		20/07/18		
E2-L4		24/07/18		
F2-L5	$4.2x10^{-10}$m/s	26/07/18		P 19/09/18
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		
C2-L7		20/08/18		
D2L8		06/09/18		
C3L5		13/09/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability Tests

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E5L2
Sample Type:	C

Description:
Stiff dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.75	99.16
Height	*mm*	101.78	101.19
Moisture Content	*%*	21	25
Bulk Density	*Mg/m³*	2.04	2.13
Dry Density	*Mg/m³*	1.68	1.71

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.22	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	14.0

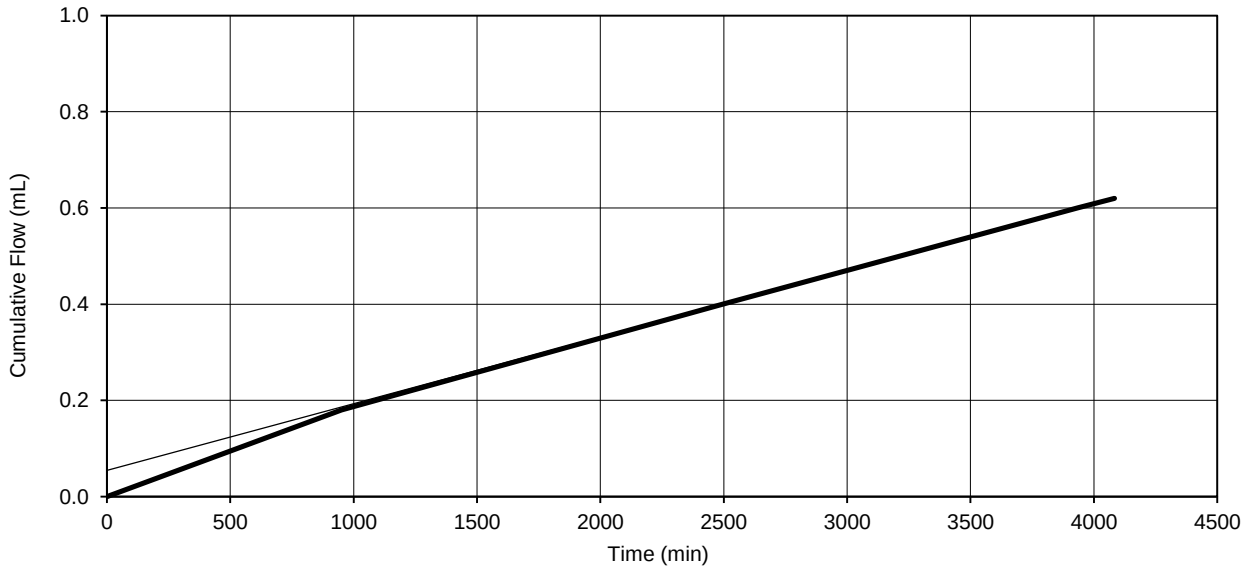
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 3.0×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
17/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	F2L5
Sample Type:	C

Description:
Stiff fissured dark grey CLAY. Rare shell fragements up to 10mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	102.18	102.12
Height	*mm*	99.55	99.50
Moisture Content	*%*	22	24
Bulk Density	*Mg/m³*	1.96	2.01
Dry Density	*Mg/m³*	1.61	1.62

SATURATION STAGE

Saturation by constant moisture content.

Pore pressure coefficient ('B' value)		1.00	1.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	1.4

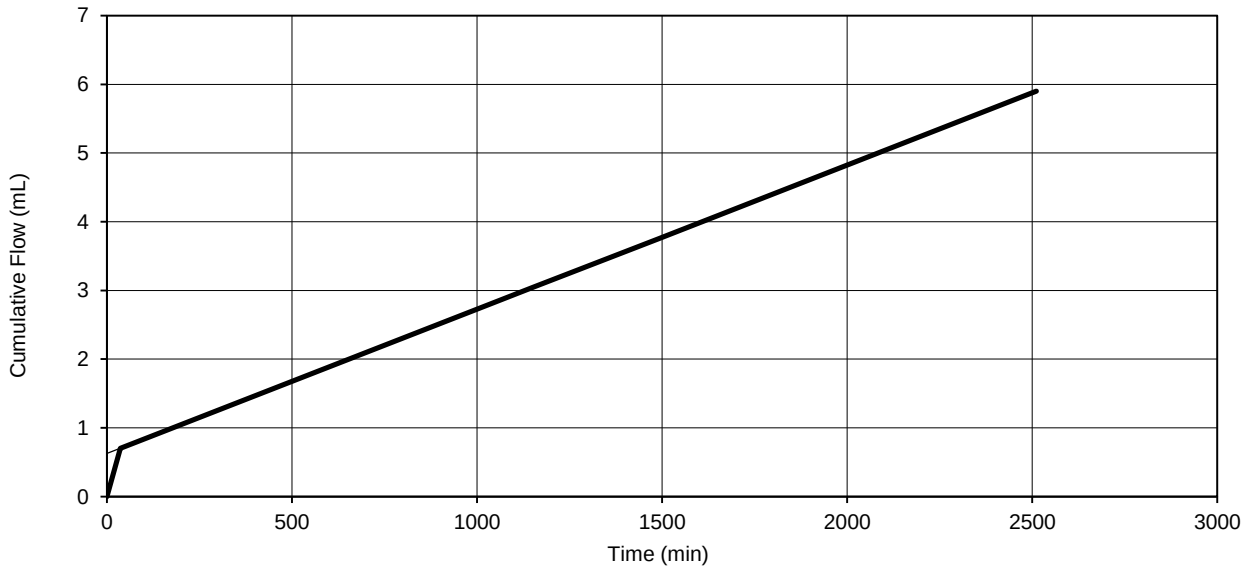
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 4.2×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
17/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Perm F4L2 WW 180918

Sample Ref.: E4-L2

Sample Type: C

Description: Stiff dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.95	99.66
Height	*mm*	100.95	100.66
Moisture Content	*%*	20	23
Bulk Density	*Mg/m³*	2.06	2.13
Dry Density	*Mg/m³*	1.71	1.73

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.54	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	6.9

PERMEABILITY STAGE

Measured under constant head conditions in a triaxial cell

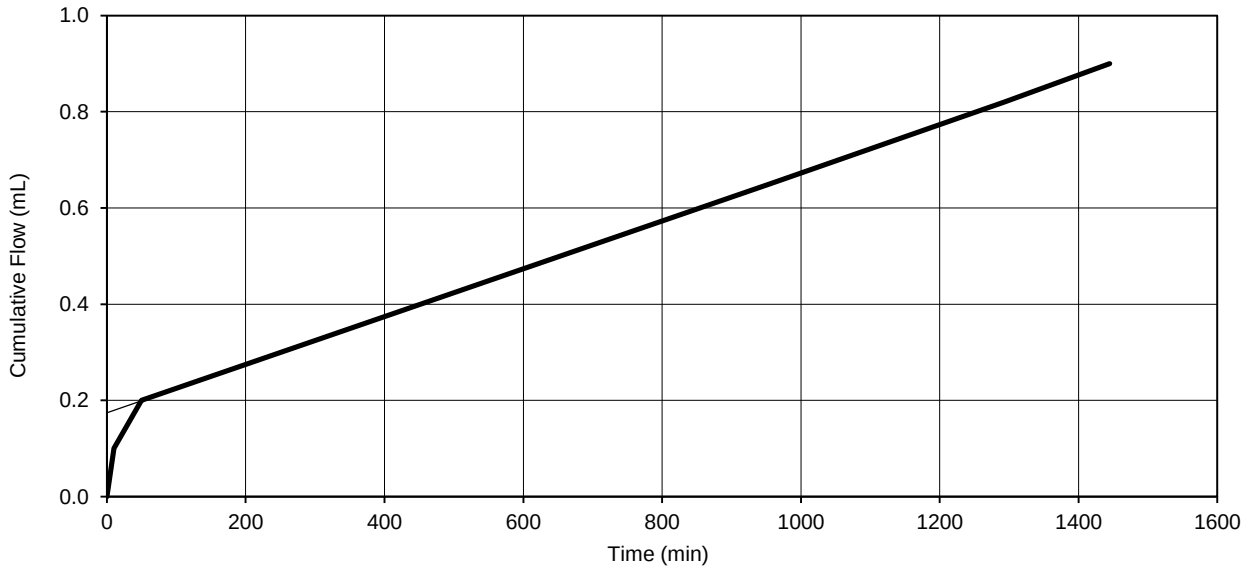
Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	1

Coefficient of Permeability

k_v at 20 °C = 1.1×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
17/09/2018

Project Number: **GEO / 27763**

Project Name: **DOCKSWAY CELL 4 AG0390**

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Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1628**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D3-L4-C1	Core 2 D4-L4-C1	Core 3 D5-L3-C1		
Bulk Density	2.05	2.05	2.06		
Moisture Content	22	21	21		
Dry Density	1.68	1.69	1.70		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.3	2.4	1.7		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 18/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1645**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D3-L5-C1	Core 2 D4-L5-C1	Core 3 B3-L5-C1	Core 4 B4-L5-C1	
Bulk Density	2.07	2.04	2.03	2.05	
Moisture Content	21	23	22	21	
Dry Density	1.71	1.66	1.66	1.69	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.2	1.8	2.4	2.7	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 21/09/2018	Fig

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 4 – Field Logs

Available on request

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1629	D3-L4 17.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1630	D3-L4 17.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1631	D3-L4 17.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1632	D4-L4 17.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1633	D4-L4 17.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1634	D4-L4 17.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1635	D5-L3 17.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1636	D5-L3 17.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1637	D5-L3 17.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	18/09/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1646	D3-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	142	
1647	D3-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	118	
1648	D3-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1649	D4-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	104	
1650	D4-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
1651	D4-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1652	B3-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
1653	B3-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1654	B3-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	105	
1655	B4-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1656	B4-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1657	B4-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
CITY COUNCIL
CYNGOR DINAS
Casnewydd

Appendix 6 – PI, PL, MC, LL Results

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-7	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.8	100	50	21	29		
F2 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	50	21	29		
F3 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	49	21	28		
F4 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	50	21	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F3L2		Dark grey clayey SILT with rare fossil fragments.	2.70	2
GT4		F4L2		Dark grey CLAY and SILT with rare fossil fragments.	2.67	2
GT7		C4L7		Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.	2.69	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

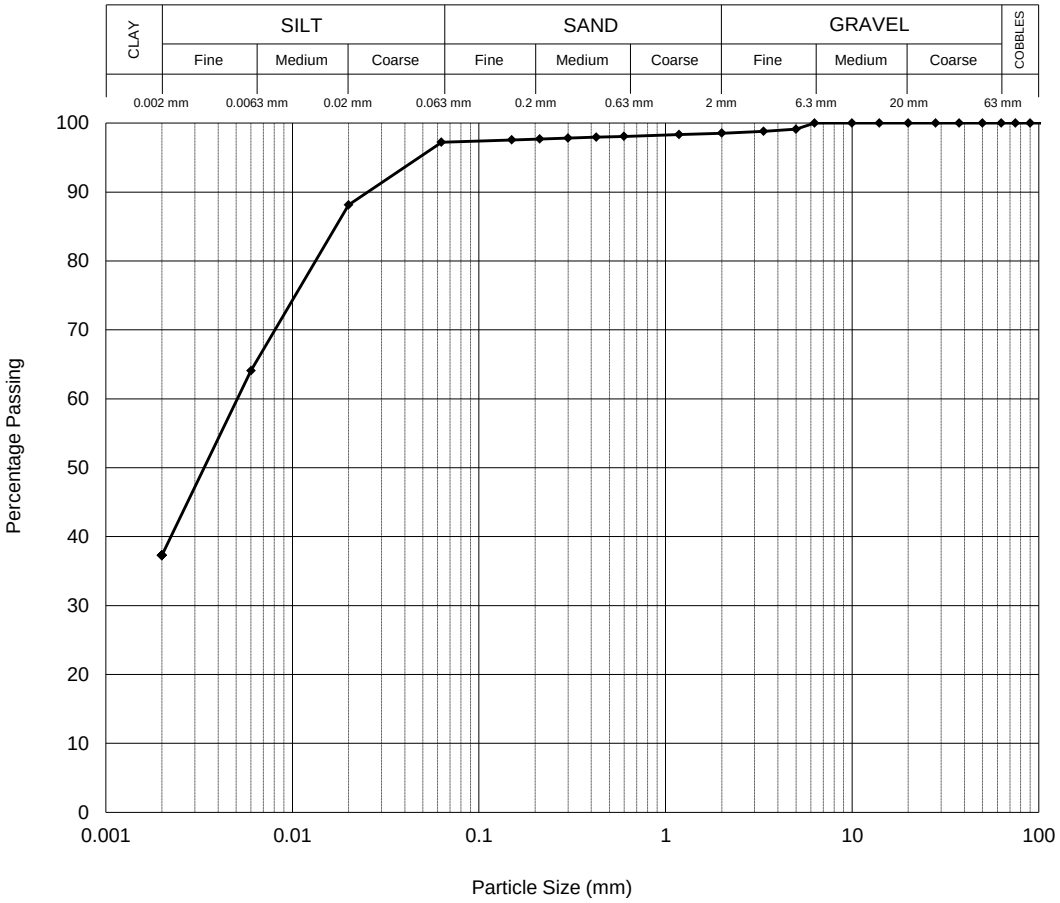
BH / TP No.	GT3
Sample Ref	F3L2

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	64
2 µm	37

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	60
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

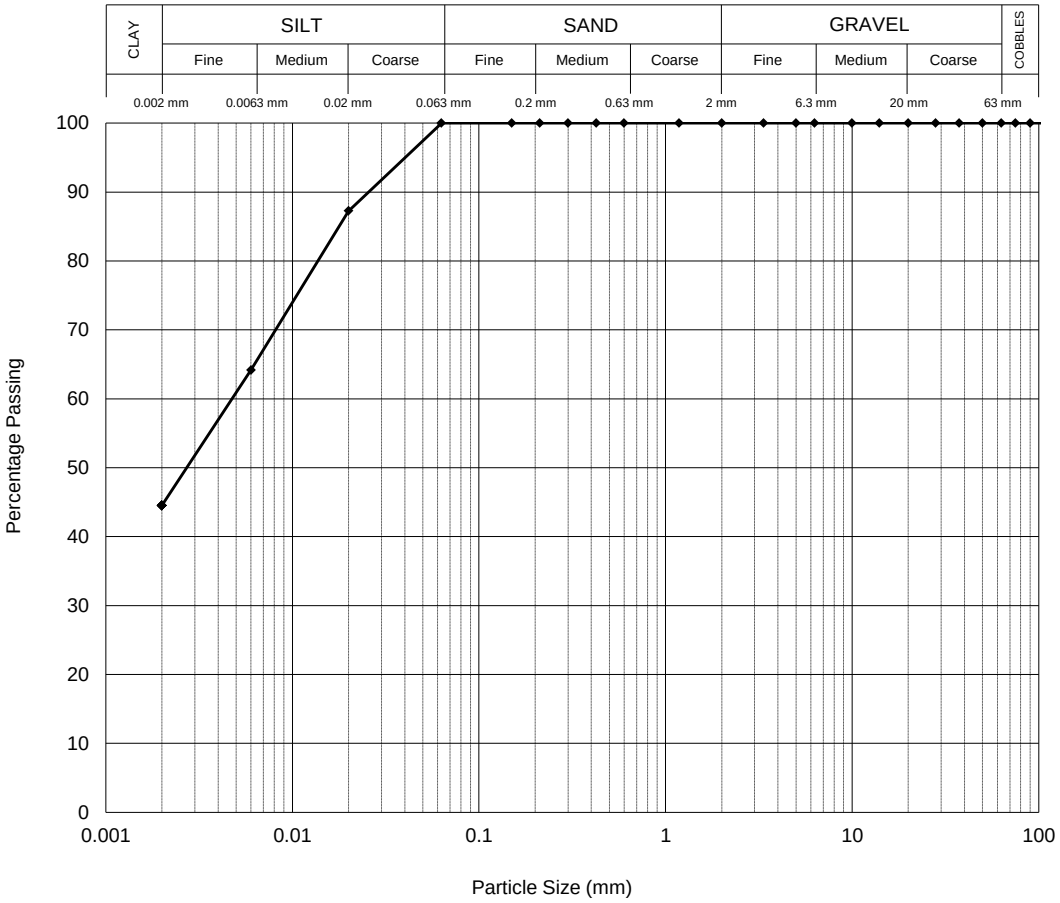
BH / TP No.	GT4
Sample Ref	F4L2

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	100
212 µm	100
150 µm	100
63 µm	100



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	64
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	0
Silt	55
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

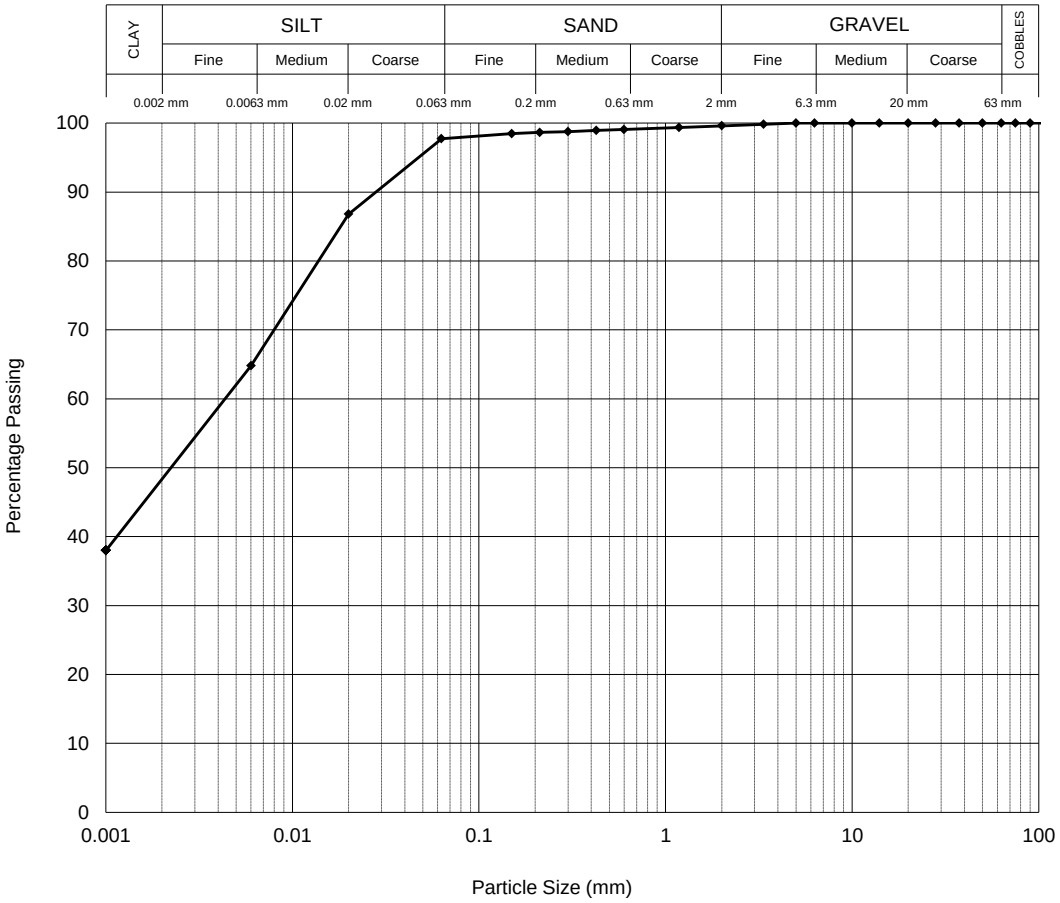
BH / TP No.	GT7
Sample Ref	C4L7

Description

Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
1 µm	38

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-11	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	49	21	28		
E4 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	48	20	28		
E5 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.3	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E4L2		Dark grey CLAY and SILT with rare medium gravel and fossil fragments.	2.66	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

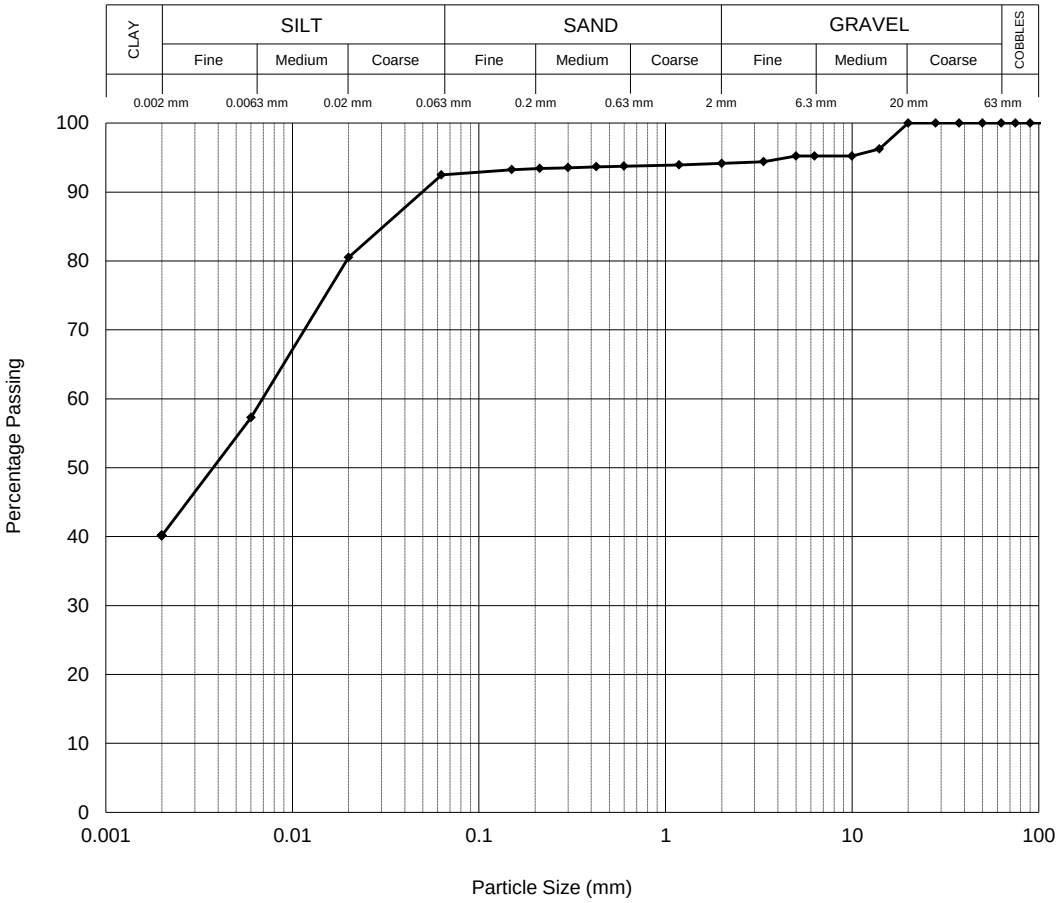
BH / TP No.	GT1
Sample Ref	E4L2

Description

Dark grey CLAY and SILT with rare medium gravel and fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	96
10.0 mm	95
6.30 mm	95
5.00 mm	95
3.35 mm	94
2.00 mm	94
1.18 mm	94
600 µm	94
425 µm	94
300 µm	94
212 µm	93
150 µm	93
63 µm	92



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	57
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	6
Sand	2
Silt	52
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F1 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			22.1	100	47	21	26		
F2 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			23.0	100	49	21	28		
F3 L5	GT10	0.00		B	Dark grey slightly sandy CLAY			20.6	100	47	20	27		
G2 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			23.1	100	51	22	29		
G3 L5	GT8	0.00		B	Dark grey slightly sandy CLAY			21.9	100	46	20	26		
G4 L5	GT9	0.00		B	Dark grey slightly sandy CLAY			23.0	100	48	20	28		
G5 L4	GT3	0.00		B	Dark grey slightly sandy CLAY			20.4	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT11		F3L5	B	Dark grey silty CLAY	2.66	2
GT5		G2L5	B	Dark grey silty CLAY	2.70	2
GT6		G4L5	B	Dark grey clayey SILT	2.69	2
GT7		G5L4	B	Dark grey clayey SILT	2.72	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

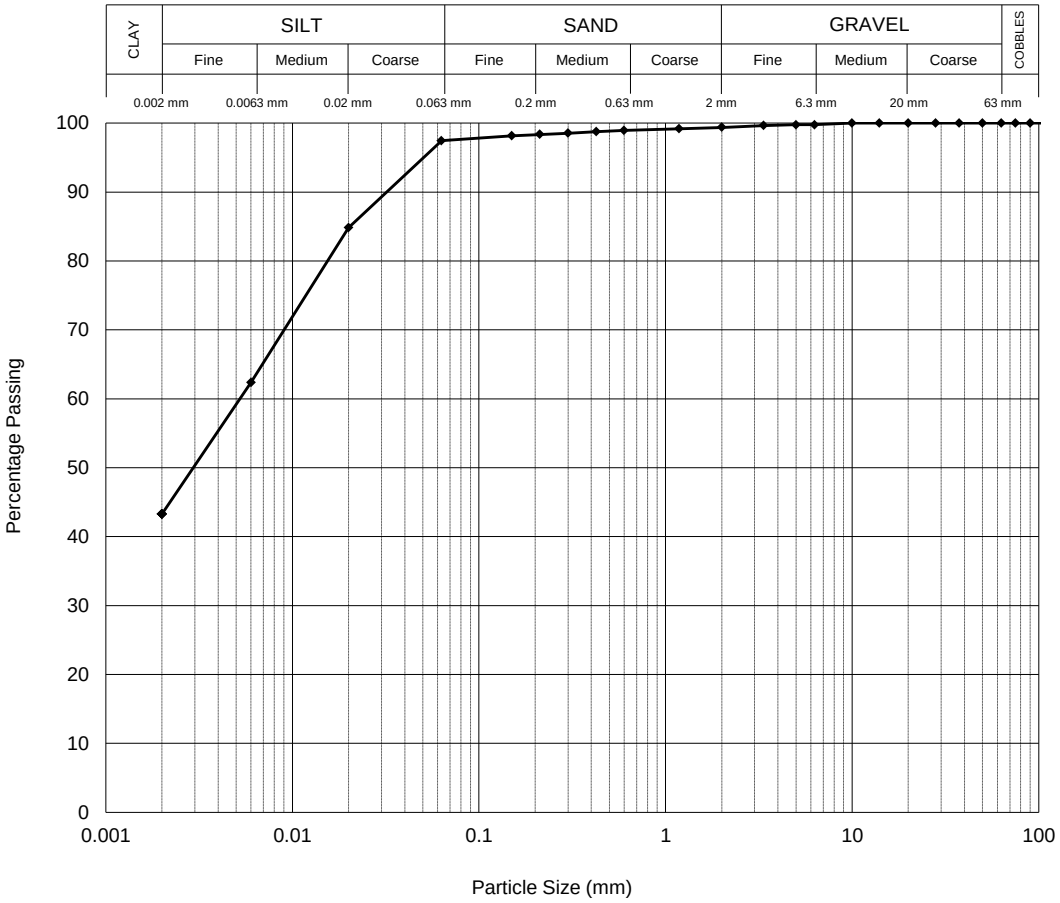
BH / TP No.	GT5
Sample Ref	G2L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	62
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	54
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

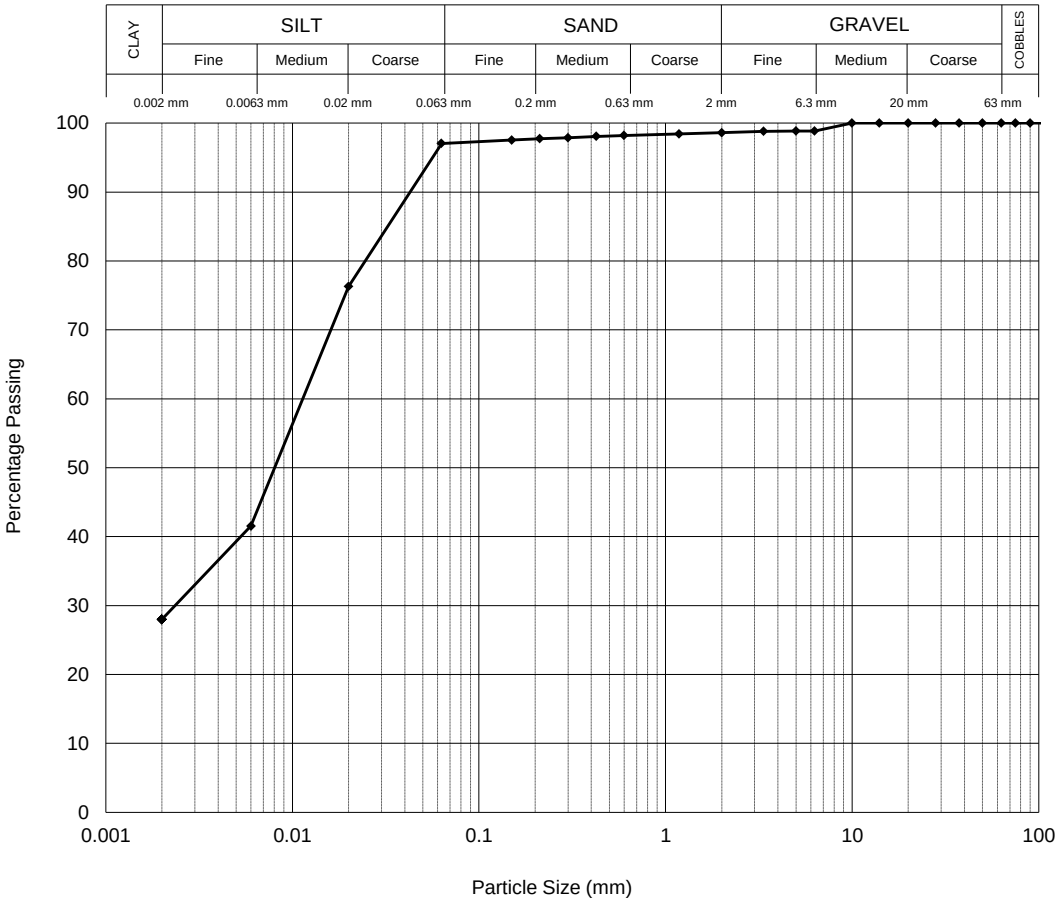
BH / TP No.	GT6
Sample Ref	G4L5
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	42
2 µm	28

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	69
Clay	28

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

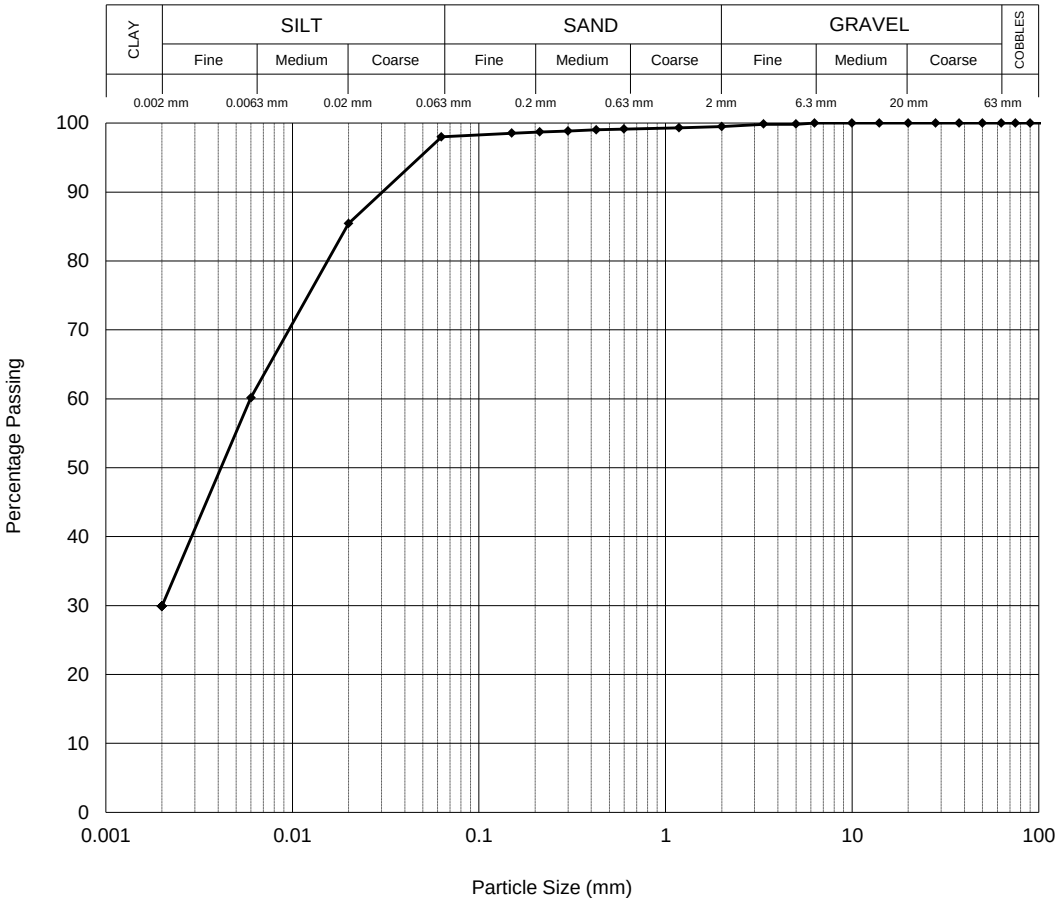
BH / TP No.	GT7
Sample Ref	G5L4
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	60
2 µm	30

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	68
Clay	30

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

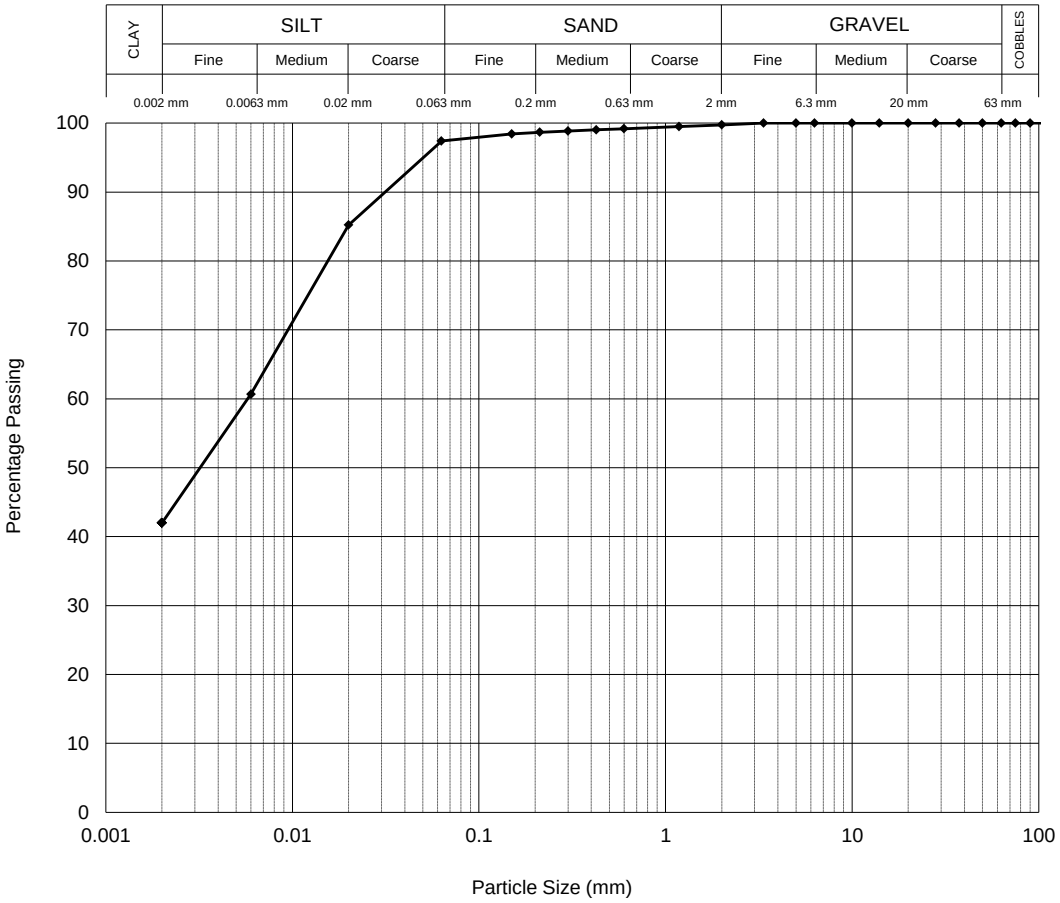
BH / TP No.	GT11
Sample Ref	F3L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	55
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	48	22	26		
B1 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.4	100	47	21	26		
E1 L7	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		B1L1	B	Dark grey clayey SILT with rare fossil fragments.	2.67	2
GT6		E1L7	B	Dark grey clayey SILT with rare fossil fragments.	2.67	2
GTA		B1L2	B	Dark grey clayey SILT with rare fossil fragments.	2.69	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
17/09/2018

Project Number:

GEO / 27946

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

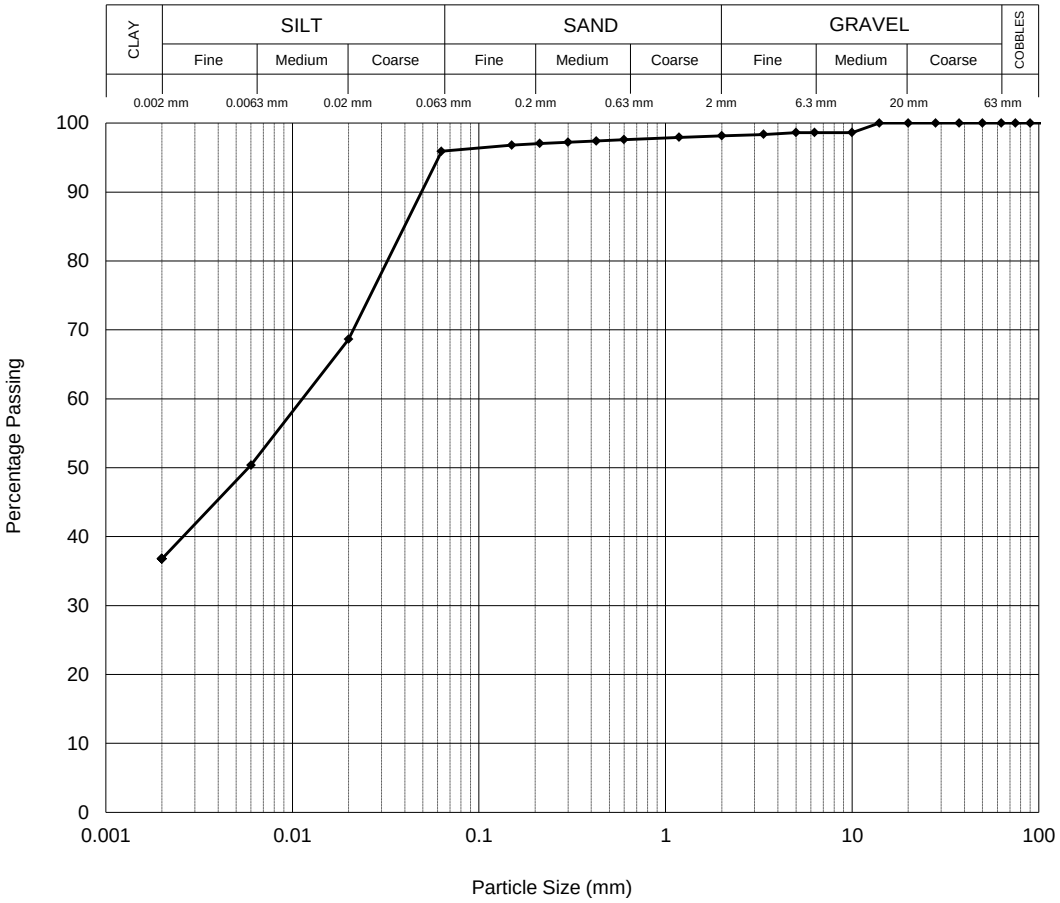
BH / TP No.	GT2
Sample Ref	B1L1
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	99
6.30 mm	99
5.00 mm	99
3.35 mm	98
2.00 mm	98
1.18 mm	98
600 µm	98
425 µm	97
300 µm	97
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	69
6 µm	50
2 µm	37

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	2
Sand	2
Silt	59
Clay	37

Checked and Approved by

S Burke

S Burke - Senior Technician
17/09/2018

Project Number:

GEO / 27946

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

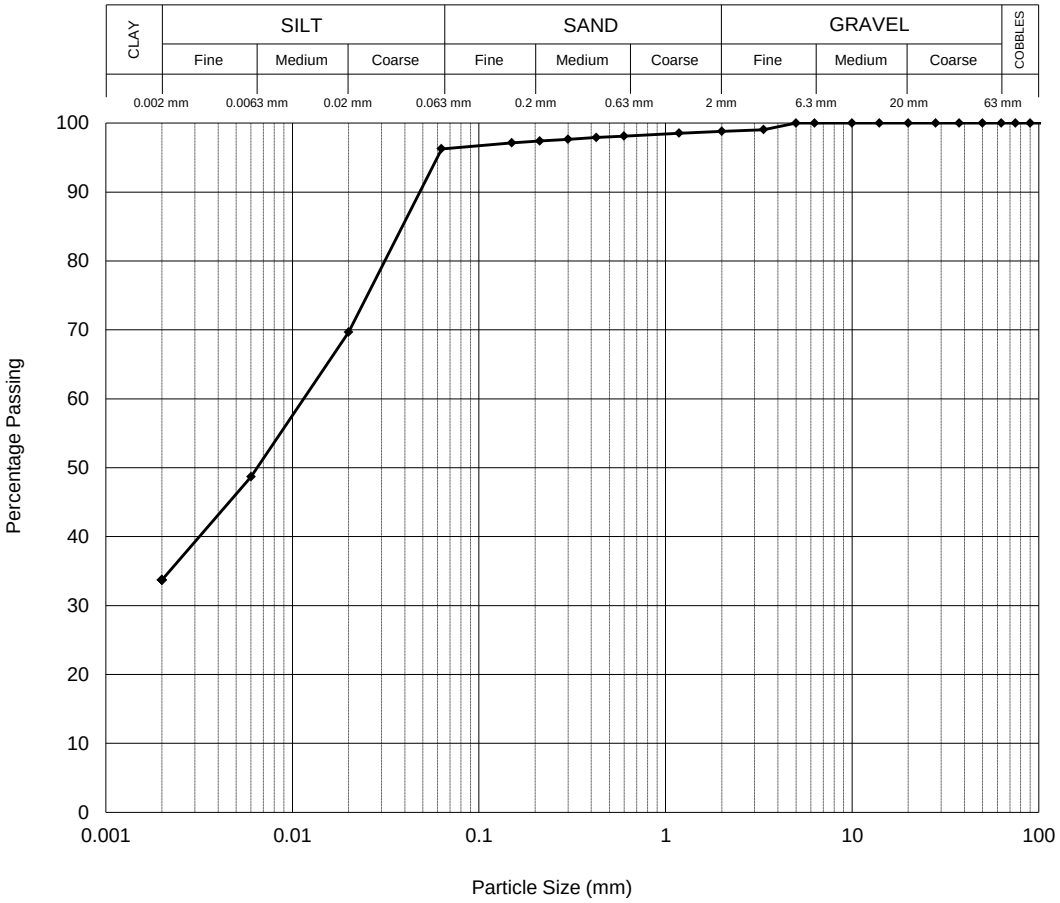
BH / TP No.	GT6
Sample Ref	E1L7
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	70
6 µm	49
2 µm	34

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	63
Clay	33

Checked and Approved by

S Burke

S Burke - Senior Technician
17/09/2018

Project Number:

GEO / 27946

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

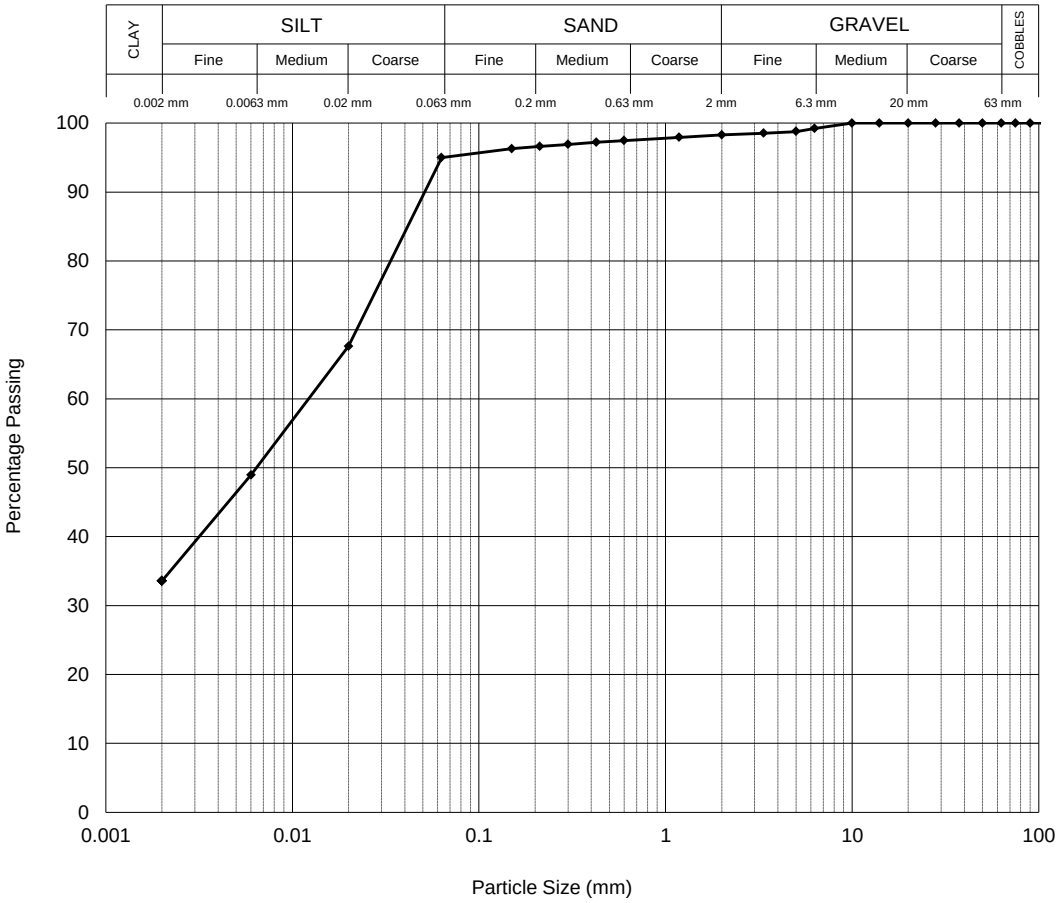
BH / TP No.	GTA
Sample Ref	B1L2
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	98
1.18 mm	98
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	96
63 µm	95



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	68
6 µm	49
2 µm	34

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	2
Sand	3
Silt	61
Clay	34

Checked and Approved by

S Burke

S Burke - Senior Technician
17/09/2018

Project Number:

GEO / 27946

Project Name:

DOCKSWAY CELL 4
AG0390

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Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS Casnewydd

Appendix 7 – Photographs

Streetscene
Y-Strydynun

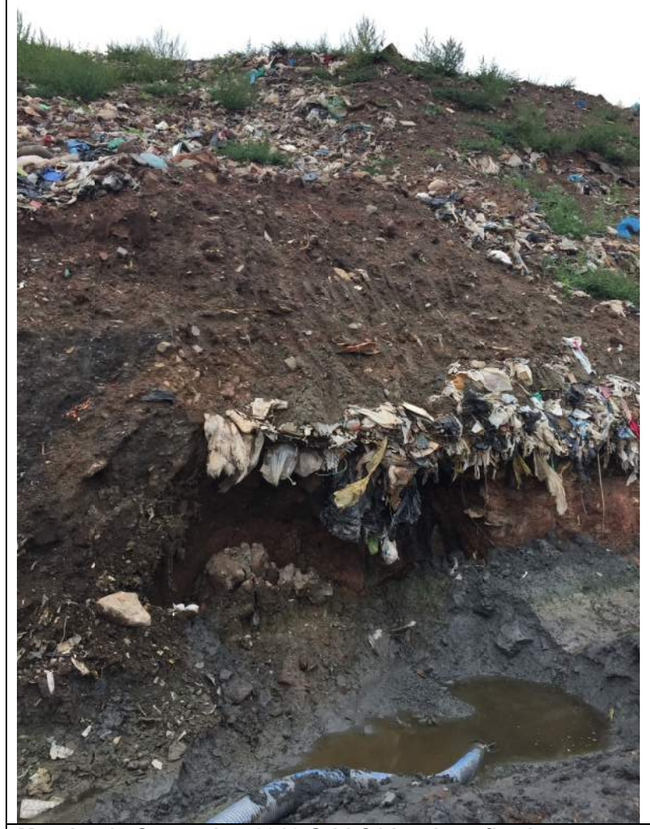
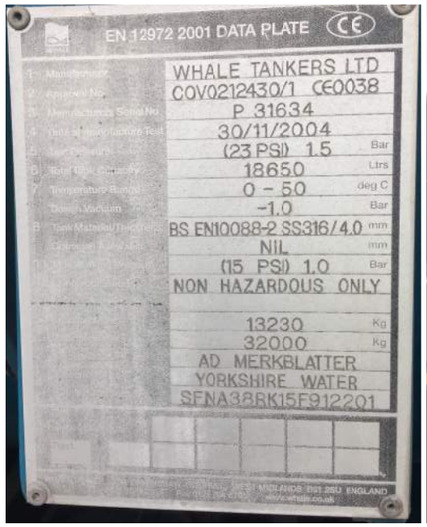
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South Wales/De Cymru
NP20 4UR



Monday 17 September from Grid C1

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
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Monday 17 September 2018 Grid C1 leachate flowing	**Wednesday 19 September 2018 Grid A1 leachate removed over 2hrs**

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR



Friday 21 September rain Thursday from Grid B4 – work complete in B4, C4, D4, D3, B2, C2 and D2. Work remains B5, C5, D5 and B1, C1 and D1

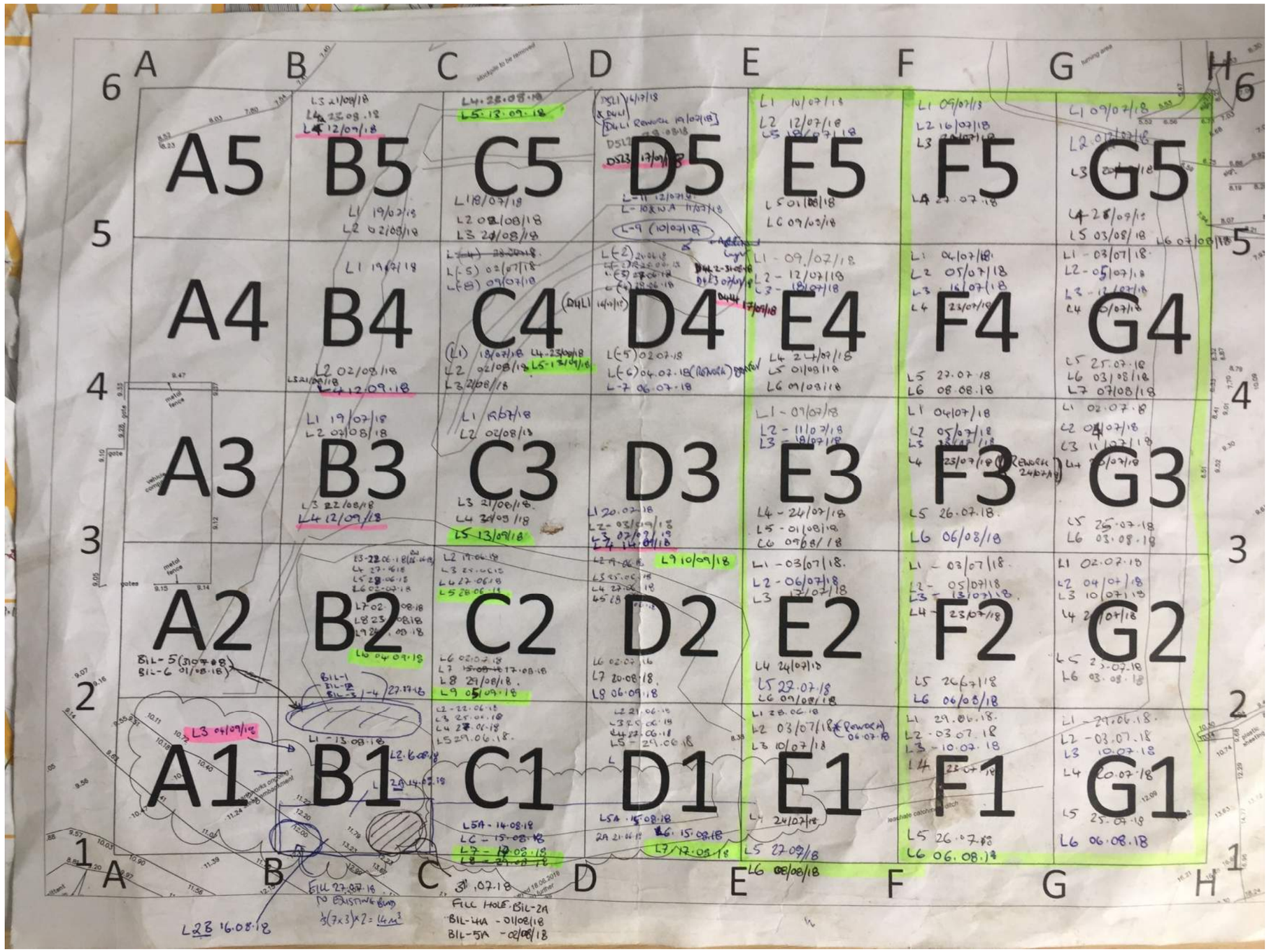


Friday 21 September rain Thursday from Grid D1

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd



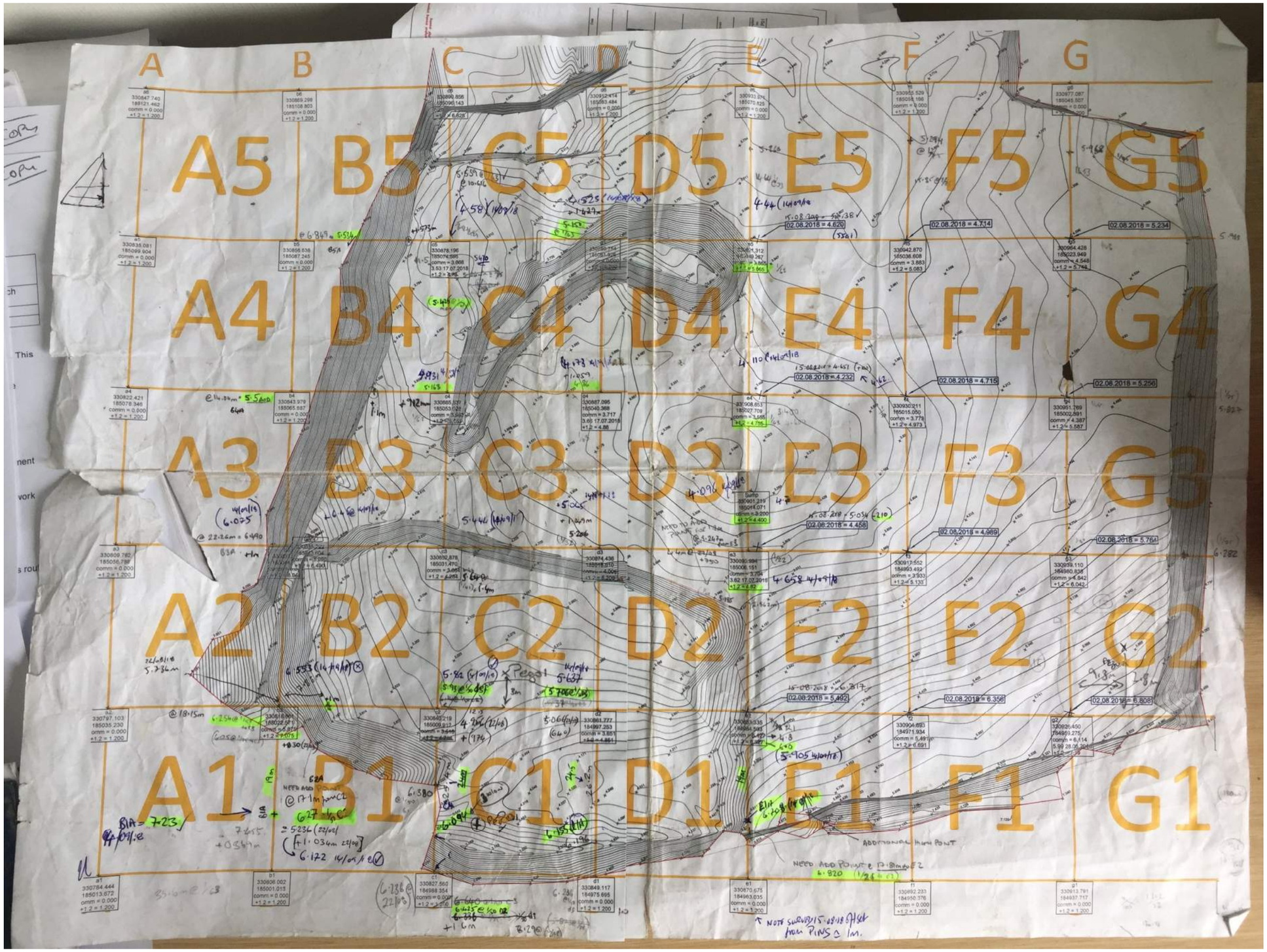
Grids completion Monday 17 September2018

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
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South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd

Grids Levels Monday 17 September2018



Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Casnewydd

Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 15 WE 30/09/18

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Project Ref: 2506
Date: 30-09-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		30-09-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

Streetscene
Y-Strydynun

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South Wales/De Cymru
NP20 4UR

Contents

1.0 Introduction

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3.0 Progress For the Week

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3.2 Work – progress
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3.4 Layer 2
3.5 Layer 3
3.6 Layer 4

4.0 Testing

4.1 Core Cutter Samples
4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

1. Progression Plan
2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Rain over the weekend delayed progress Monday Am. Monday to Friday no rain. Thursday mist in am.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile is good with a stockpile established.

Up to the 20 September 2018, 47,085 tonnes of material was delivered to site. No update available this week. The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the level B3L5, B4L5, B5L5, D3L5, D4L5 and D5L4

Testing by CJ Associates was not undertaken Monday, Tuesday, Wednesday and Friday due completion of levelling works.

CJ Associates installed the Piezometers Tuesday – Wednesday.

The drainage was installed during the week and sump Manhole installed Friday

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal. Material contaminated by leachate was removed to the stockpile to be processed and relayed.

Three 10-ton front loader, 2 excavators, dozer, roller and bowser were on site.

3.3a Additional Layers
No work undertaken

3.3b Levelling the Area
Topping up to level areas was undertaken in C1, D1, B4, B5, C4, C5, D4 and D5

3.3 Layer 1
No work undertaken

3.4 Layer 2

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No work undertaken

3.5 Layer 3

No work undertaken

3.6 Layer 4

B1L4

3.7 Layer 5

D5L5

3.8 Layer +6

No work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

1 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
1 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

No samples or spares were taken this week.
Results have been received and are shown in the appendices.

4.3 MC and PI,

Details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

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Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 80KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor attended site on Monday 24 September 2018 to pump out the adjacent cell with a noticeable reduction/ stop of leachate flow the removal. The leachate started flowing again on Wednesday 26 September 2018.
Some weathering of the cut face surface has been noted.

Streetscene
Y-Strydynun

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Appendix 1 - Progression Plan

Streetscene
Y-Strydynun

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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-5	N/A B1L-5	N/A B1L-5	MC&PI/D&MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1		L2A		L2B		L2				L3		L4				L5		L5A		L6		L7		L8		L9		L10	
	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd

Date																														
A2																														
Date																														
A3																														
Date																														
B1	MC&PI/D S&D/ D&MC	P Sh-125 P-PI 03/09/18 P- DS&D 19/09/18	MC&P I/DS& D/D& MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/ D&MC	P Sh-150			MC&PI/ D&MC	P-Sh-90	MC&PI/ D&MC	To be tested																	
Date	T- 13/06/18	P 15/08/18	T- 14/0 6/18	P 15/08/18 P-PI 03/09/18 P-DS&D 31/08/18	T- 16/06/ 18	N/A B1L2	T- 16/06/18	P 20/08/18 P-PI 03/09/18 P-DS&D 19/09/18			T- 04/09/18	P- 06/09/18 P-PI 15/09/18	T- 28/09/18																		
B2	MC&PI/D &MC	P Sh-max					MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120			MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96	MC&PI/ DS&D/D& MC And S	P Sh-115	MC&PI/ DS&D/D& MC And S	P Sh-122	MC&PI/D &MC And S	P-Sh-125
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P- 03/08/ 18 P-PI 03/09/ 18	T 23/08/ 18	P 24/08/ 18 P-PI 15/09/ 18	T 24/08/ 18	P 28/08/ 18 P-PI 15/09/ 18	T 04/09/ 18	P- 06/09/ 18 P-PI 15/09/ 18
B3	MC&PI/D S&D/D&M C	P Sh-70					MC&PI/D S&D/D&M C	P Sh-105			MC&PI/D S&D/D&M C	P Sh-94	MC&PI/D S&D/D&M C	P Sh-95			MC&PI/D S&D/D&M C	P Sh-105												
Date	T- 19/06/18	P 20/07/18 F-PI Moisture 08/08/18 P- DS 24/08/18					T- 02/08/18	P 03/08/18 P-PI 03/08/18 P-DS&D 03/09/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18	T- 12/09/18	P 13/09/18			T- 19/09/18	P 20/09/18												
B4	MC&PI/D &MC	P Sh-86					D&MC	P S-100			MC&PI/D S&D/D&M C	P Sh-75	MC&PI /D&MC	P Sh-140			MC&PI/ DS&D/D& MC	P Sh-150												
Date	T- 19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18	T- 12/09/18	P 13/09/18			T- 19/09/18	P 20/09/18												
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2	N/A C5L4	N/A C5L4	N/A B4L3	N/A B4L3	N/A B4L4	N/A B4L4																
Date	T- 19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2	N/A 23/08/18	N/A 24/08/18	N/A B4L3	N/A B4L3	N/A B4L4 12/09/18	N/A B4L4 13/09/18																
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120			MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/ D&MC	P Sh-89	MC&PI/ DS&D/D &MC	P Sh-125						
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18						
C2	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D&S**/ D&MC And S	Sh-106			MC&PI/ **DS&D**/ D&MC And S	Sh-80	MC&PI/ **DS&D**/ D&MC And S	Sh-145	MC&P I/D& MC	P-116	MC&PI/ DS&D/D& MC And S	P-Sh-150		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18 P-PI 03/09/ 18	T- 28/07/ 18	P- 29/0818 P-PI 15/09/18	T 04/09/ 18	P- 06/09/ 18 P-PI 15/09/ 18		
C3	MC&PI/ **D&S**/D &MC	P Sh- 128					MC&PI/ **D&S**/D &MC	P Sh- 80			MC&PI/ **D&S**/D &MC	P Sh- 150	MC&PI/ **D&S**/D &MC	P Sh- 88			MC&PI/ D&MC	P Sh- 122												
Date	T- 19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T- 02/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T- 30/08/18	P 03/09/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18												
C4	MC&PI/D S&D/D&M C	Sh- 115					MC&PI/D S&D/D&M C	P Sh- 124			MC&PI/ D&MC	P Sh- 100	MC&PI/ D&MC And S	P Sh-150			MC&PI/ DS&D/D &MC	P Sh- 128												
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T- 02/08/18	P 03/08/18 P-PI 03/09/18 P-DS&D 03/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 28/08/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18												
C5	MC&PI/D &MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100			MC&PI/ D&MC	P Sh- 95												
Date	T- 18/07/18	P 20/07/18					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18	T 23/08/18	P 24/08/18			T- 13/09/18	P 17/09/18												

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd

		P-PI 08/08/18										P-PI 15/09/18		P-PI 15/09/18															
D1	MC&PI/D &MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ /D&MC And S	P Sh-max	MC&PI/**D& DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max	MC&PI/D S&D/D& MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125						
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18 P-DS&D 06/09/18	T-14/08/18	P 16/08/18 P-PI 03/09/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18						
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D& DS**/ D&MC And S	P Sh-122			MC&PI/**D& DS**/ D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122	MC&PI/ **DS&D/** D&MC And S	Sh-78	MC&PI/ **DS&D/** D&MC And S	Sh-121		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/ 18 P-PI 03/09/ 18	T 06/09/ 18	P 07/09/ 18	T 10/09/ 18	P 13/09/ 18 P PI 26/09/ 18		
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58					MC&PI/ **D&S**/D &MC	P Sh- 106			MC&PI/ **D&S**/D &MC	P Sh- 64	MC&PI/ **D&S**/D &MC	P Sh- 150			MC&PI/ D&MC	P Sh- 118												
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18					T- 03/09/18	P 04/09/18 P-PI 15/09/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18	T- 14/09/18	P-18/09/18			T- 19/09/18	P-20/09/18												
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S**/D&MC And S	P Sh-70			MC&PI/ D&MC	P Sh- 80	MC&PI/ D&MC	P Sh- 150			MC&PI/ D&MC	P Sh- 104												
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	P- 04/09/18 P-PI 15/09/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18	T- 17/09/18	P-18/09/18			T- 19/09/18	P-20/09/18												
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142			MC&PI/ D&MC	P Sh- 150	N/A D4/L5	N/A D4/L5			MC&PI/ DS&D/ D&MC	P Sh- 80												
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818 P-PI 15/09/18			T- 17/09/18	P-18/09/18	N/A D4/L5	N/A D4/L5			T- 26/09/18	P-27/09/18												
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132						
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18	T- 14/08/18	P 16/08/18 P-PI 03/09/18 P-DS&D 19/09/18						
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110								
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P- DS&D 06/09/18								
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **DS&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6								
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18 P-DS&D					T- 03/07/18	P 05/07/18 F-PI Moistur 08/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6								

Streetscene
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NP20 4UR

		06/09/18						P- DS&DS 31/08/18				P-DS&D 06/09/18																		
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 06/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122								
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6								
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18								
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6								
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6								
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90						
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18	T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18						
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7								
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18			T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 13/09/18								

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

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Permeability

Grid Ref	Result – K_y at 20°C	Date Sampled	Date Testing commenced	Date Testing complete
C2-L1	$1.4x10^{-10}$m/s $9.6x10^{-11}$m/s	19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3	$9.7x10^{-11}$m/s	22/06/18		P 31/08/18
D2-L4	$6.8x10^{-10}$m/s	27/06/18		P 31/08/18
F3-L1	$1.6x10^{-10}$m/s	04/07/18		P 31/08/18
F4-L2	$1.1x10^{-10}$m/s	05/07/18	Miss named E4L2	P 19/09/18
D4L-9	$1.1x10^{-10}$m/s	10/07/18		P 06/09/18
E5-L2	$3.0x10^{-11}$m/s	12/07/18		P 19/09/18
E3-L3	$1.2x10^{-10}$m/s	18/07/18		P 31/08/18
D3-L1	$6.1x10^{-11}$m/s	20/07/18		P 25/09/18
E2-L4	$9.0x10^{-11}$m/s	24/07/18		P 25/09/18
F2-L5	$4.2x10^{-10}$m/s	26/07/18		P 19/09/18
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		
C2-L7		20/08/18		
D2L8		06/09/18		
C3L5		13/09/18		

Bund

Layer	Ref	Date	Pass/Fail

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Appendix 2 - Test Results - Permeability Tests

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	D3L1	Description: Firm grey CLAY
Sample Type:	C	

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.55	99.25
Height	*mm*	100.78	100.47
Moisture Content	*%*	25	27
Bulk Density	*Mg/m³*	1.99	2.03
Dry Density	*Mg/m³*	1.59	1.60

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.49	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	7.2

PERMEABILITY STAGE

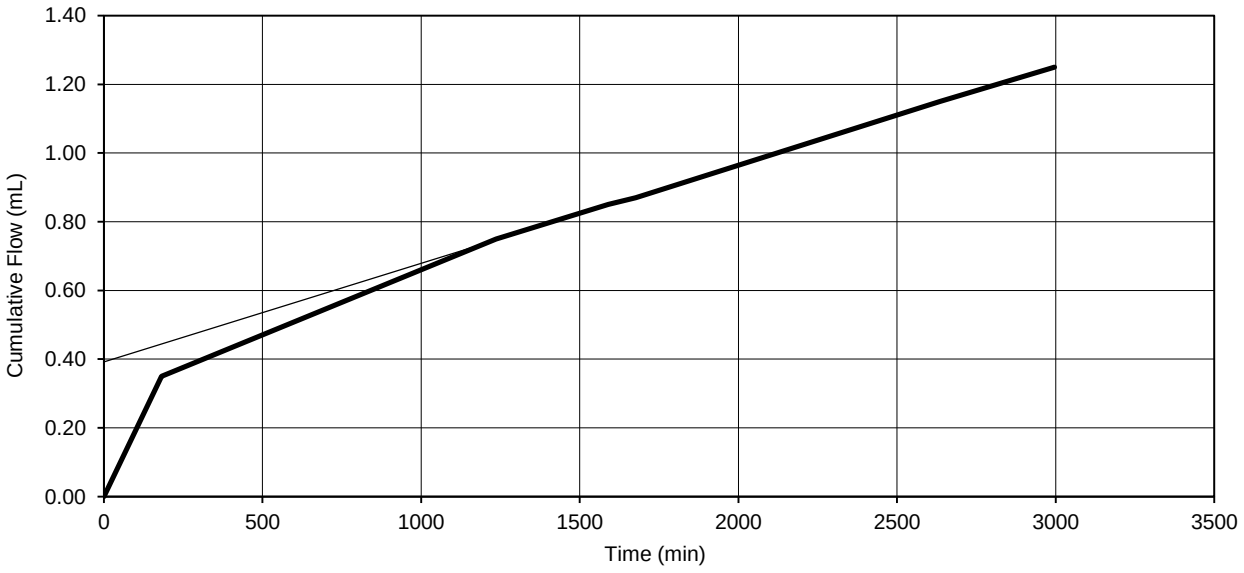
Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	7
Consolidation	*days*	1
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 6.1×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
24/09/2018

Project Number: **GEO / 27840**

Project Name: **DOCKSWAY CELL 4 AG0390**

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E2-L4
Sample Type:	C

Description:
Stiff fissured grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.67	99.34
Height	*mm*	100.52	100.19
Moisture Content	*%*	21	24
Bulk Density	*Mg/m³*	2.05	2.13
Dry Density	*Mg/m³*	1.70	1.72

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.24	0.97

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	7.8

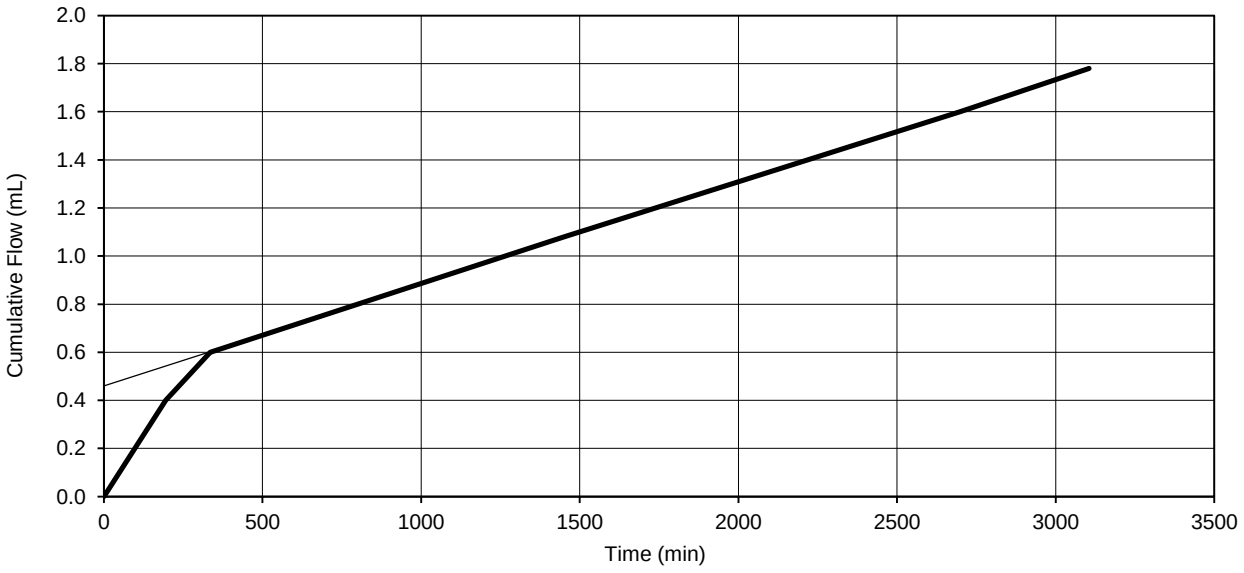
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	6
Consolidation	*days*	1
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 9.0×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
24/09/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1724**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**27/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D5-L5-C1				
Bulk Density	2.07				
Moisture Content	22				
Dry Density	1.70				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	1.0				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 28/09/2018	Fig

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Appendix 4 – Field Logs

Available on request

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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1725	D5-L5 27.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	80	
1726	D5-L5 27.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1727	D5-L5 27.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	28/09/2018	

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Appendix 6 – PI, PL, MC, LL Results

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D2 L8	GT1	0.00		B	Dark grey slightly sandy CLAY			21.4	100	51	22	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
26/09/2018	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D3 L3	GT1	0.00		B	Dark grey slightly sandy CLAY			20.3	100	51	21	30		
D4 L3	GT3	0.00		B	Dark grey slightly sandy CLAY			21.3	100	50	22	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
26/09/2018	Lisa Maiden	1
		sheet 1

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Appendix 7 – Photographs

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Monday 24 September from Grid C1

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Monday 24 September 2018 from Grid D1 Leachate buildup and low area.	**Monday 24 September 2018 from Grid C5 & B5 removal of top 100mm saturated area in order to lay material. Later in the week removal of material in D5**

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Tuesday 25 September 2018 Grid G2 CJ Associates Drilling Rig on site	**Tuesday 25 September 2018 Grid new access via Grid B4**

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Wednesday 26 September 2018 9am – removal soft material in D5/D4	**Thursday 27 September 2018 Levelling area in D1 to B1**

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Thursday 27 September 2018 from Grid B4 Sump area soft material removed and sump Concrete manhole to be installed Friday

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Tuesday 25 September 2018 Tip prevents access via Grid D5 – access via Grid B1 not suitable due to soft material- New access created via Grid B4

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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 16 WE 07/10/18

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Project Ref: 2506
Date: 07-10-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		07-10-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

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1.0 Introduction

2.0 Weather

3.0 Progress For the Week

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4.2 Permeability Samples
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4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

1. Progression Plan
2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

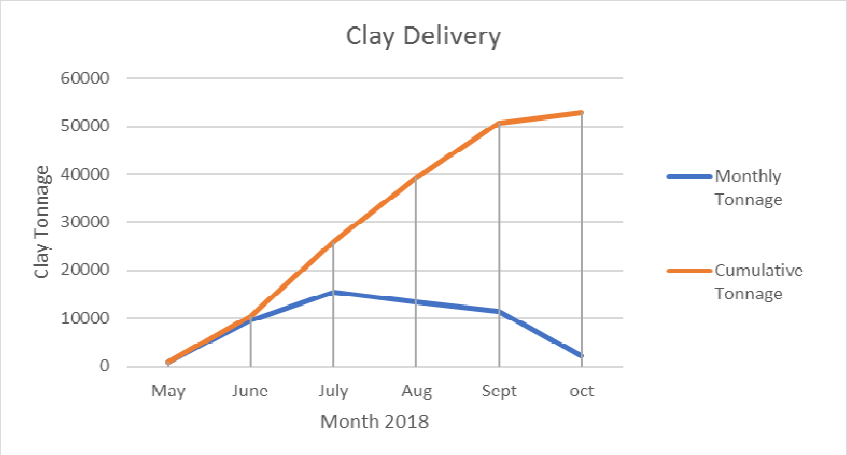
No Rain over the weekend and dry all week

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile is good with a stockpile established.

Up to the 05 October 2018, 52,788 tonnes of material was delivered to site. The working hours this week were 730am to 1600pm.



3.2 Work Progress

Work was undertaken to the level On the Bunds and levelling in D1 to B1.

Drainage was installed during the week and sump Manhole stack installed Friday

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal.

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A final base layer survey was undertaken on 4 & 5 October 2018.
Olivia Esler attended site Tuesday 02 October 2018.
Testing by CJ Associates was undertaken Tuesday and Friday.

The Dozer was taken off site on the 3 October at 1600. The Roller was not working on Friday PM.
Plant on site two 10-ton front loader, 2 excavators, dozer, roller and bowser were on site.

3.3a Additional Layers
No work undertaken

3.3b Levelling the Area
Topping up to level areas was undertaken in B1, C1, D1

3.3 Layer 1
Bund G5 to B5 and Batter A1 to B4

3.4 Layer 2
No work undertaken

3.5 Layer 3
No work undertaken

3.6 Layer 4
No work undertaken

3.7 Layer 5
B1L5

3.8 Layer +6
No work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

6 no core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
6 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

No samples or spares were taken this week.

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Results have been received and are shown in the appendices.

4.3 MC and PI,

Details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 125KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor did not attended site this week to pump leachate out the adjacent cell. There was a consistent flow from entering the site from the adjacent cell which was pumped out and deposited on to the adjacent active tip.
Some weathering of the cut face surface has been noted.

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-3	N/A B1L-5	N/A B1L-5	MC&PI/D&MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1		L2A		L2B		L2				L3		L4				L5		L5A		L6		L7		L8		L9		L10	
	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														

Streetscene
Y-Strydynun

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South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd

Date																													
A2																													
Date																													
A3																													
Date																													
B1	MC&PI/DS&D/D&MC	P Sh-125 P-PI 03/09/18 P- DS&D 19/09/18	MC&PI/DS&D/D&MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/D&MC	P Sh-150			MC&PI/D&MC	P-Sh-90	N/A	N/A			MC&PI/D&MC	S-150											
Date	T-13/06/18	P 15/08/18	T-14/06/18	P 15/08/18 P-PI 03/09/18 P-DS&D 31/08/18	T-16/06/18	N/A B1L2	T-16/06/18	P 20/08/18 P-PI 03/09/18 P-DS&D 19/09/18			T-04/09/18	P-06/09/18 P-PI 15/09/18	T-28/09/18	N/A			T-28/09/18	P- 03-10-18											
B2	MC&PI/D&MC	P Sh-max					MC&PI/D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/D&MC And S	Sh-120			MC&PI/D&MC And S	Sh-100	MC&PI/D&MC And S	P Sh-96	MC&PI/DS&D/D&MC And S	P Sh-115	MC&PI/DS&D/D&MC And S	P Sh-122	MC&PI/D&MC And S	P-Sh-125
Date	T-19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P-28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P-03/08/18 P-PI 03/09/18	T 23/08/18	P 24/08/18 P-PI 15/09/18	T 24/08/18	P 28/08/18 P-PI 15/09/18 P-DS 01/10/18	T 04/09/18	P-06/09/18 P-PI 15/09/18
B3	MC&PI/DS&D/D&MC	P Sh-70					MC&PI/DS&D/D&MC	P Sh-105			MC&PI/DS&D/D&MC	P Sh-94	MC&PI/DS&D/D&MC	P Sh-95			MC&PI/DS&D/D&MC	P Sh-105											
Date	T-19/06/18	P 20/07/18 F-PI Moistur 08/08/18 P- DS 24/08/18					T-02/08/18	P 03/08/18 P-PI 03/08/18 P-DS&D 03/09/18			T-22/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T-12/09/18	P 13/09/18 P-PI 01/10/18			T-19/09/18	P 20/09/18											
B4	MC&PI/D&MC	P Sh-86					D&MC	P S-100			MC&PI/DS&D/D&MC	P Sh-75	MC&PI/D&MC	P Sh-140			MC&PI/DS&D/D&MC	P Sh-150											
Date	T-19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T-22/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T-12/09/18	P 13/09/18 P-PI 01/10/18 P-DS&D 03/10/18			T-19/09/18	P 20/09/18											
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2	N/A C5L4	N/A C5L4	N/A B4L3	N/A B4L3	N/A B4L4	N/A B4L4															
Date	T-19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2	N/A 23/08/18	N/A 24/08/18	N/A B4L3	N/A B4L3	N/A B4L4 12/09/18	N/A B4L4 13/09/18															
C1	MC&PI/**D&S**/D&MC	P Sh-125	MC&PI/D&MC and S	P Sh-120			MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh-106			MC&PI/D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/D&MC	P Sh-89	MC&PI/DS&D/D&MC	P Sh-125					
Date	T-20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T-29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T-15/08/18	P 16/08/18 P-PI 03/09/18	T-17/08/18	P 20/08/18 P-PI 03/09/18					
C2	MC&PI/**D&S**/D&MC	P Sh-max					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/D&MC And S	Sh -122			MC&PI/**D&DS**/ D&MC And S	Sh-106			MC&PI/**DS&D/** D&MC And S	Sh-80	MC&PI/**DS&D/** D&MC And S	Sh-145	MC&PI/D&MC	P-116	MC&PI/DS&D/D&MC And S	P-Sh-150		
Date	T-19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P-28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18	T-28/07/18	P-29/0818 P-PI 15/09/18	T 04/09/18	P-06/09/18 P-PI 15/09/18 P-DS 01/10/18		
C3	MC&PI/**D&S**/D&MC	P Sh- 128					MC&PI/**D&S**/D&MC	P Sh- 80			MC&PI/**D&S**/D&MC	P Sh- 150	MC&PI/**D&S**/D&MC	P Sh- 88			MC&PI/D&MC	P Sh- 122											
Date	T-19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T-02/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18			T-21/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T-30/08/18	P 03/09/18 P-PI 15/09/18			T-13/09/18	P 17/09/18 P-PI 01/10/18											
C4	MC&PI/DS&D/D&MC	Sh- 115					MC&PI/DS&D/D&MC	P Sh- 124			MC&PI/D&MC	P Sh- 100	MC&PI/D&MC And S	P Sh-150			MC&PI/DS&D/D&MC	P Sh- 128											
Date	T-18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T-02/08/18	P 03/08/18 P-PI 03/09/18 P-DS&D 03/09/18			T-21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 28/08/18 P-PI 15/09/18			T-13/09/18	P 17/09/18 P-PI 01/10/18											
C5	MC&PI/D&MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/D&MC	P Sh- 110	MC&PI/D&MC And S	P Sh-100			MC&PI/D&MC	P Sh- 95											

Streetscene
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Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 24/08/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18 P-PI 01/10/18													
D1	MC&PI/D &MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S** /D&MC And S	P Sh-max	MC&PI/**D&** **DS** / D&MC And S	Sh-112			MC&PI/ **D&S/**D &MC	P Sh-max	MC&PI/D S&D/D& MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125							
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18 P-DS&D 06/09/18	T-14/08/18	P 16/08/18 P-PI 03/09/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18							
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S** /D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&** **DS/** D&MC And S	P Sh-122			MC&PI/**D&** **DS/** D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122	MC&PI/ **DS&D/** D&MC And S	Sh-78	MC&PI/ **DS&D/** D&MC And S	Sh-121		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18	T 06/09/ 18	P 07/09/18 P-PI 26/09/18	T 10/09/18	P 13/09/18 P-PI 01/10/18 P-DS&D 03/10/18		
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58					MC&PI/ **D&S**/D &MC	P Sh- 106			MC&PI/ **D&S**/D &MC	P Sh- 64	MC&PI/ **D&S**/D &MC	P Sh- 150			MC&PI/ D&MC	P Sh- 118												
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18					T- 03/09/18	P 04/09/18 P-PI 15/09/18 P-DS 01/10/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18 P-DS&D 03/10/18	T- 14/09/18	P-18/09/18 P-PI 01/10/18			T- 19/09/18	P-20/09/18												
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S** /D&MC And S	P Sh-70			MC&PI/ D&MC	P Sh- 80	MC&PI/ D&MC	P Sh- 150			MC&PI/ D&MC	P Sh- 104												
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	P- 04/09/18 P-PI 15/09/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18	T- 17/09/18	P-18/09/18 P-PI 01/10/18			T- 19/09/18	P-20/09/18												
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142			MC&PI/ D&MC	P Sh- 150	N/A D4/L5	N/A D4/L5			MC&PI/ DS&D/ D&MC	P Sh- 80												
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818 P-PI 15/09/18			T- 17/09/18	P-18/09/18 P-PI 01/10/18	N/A D4/L5	N/A D4/L5			T- 26/09/18	P-27/09/18												
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132						
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18	T- 14/08/18	P 16/08/18 P-PI 03/09/18 P-DS&D 19/09/18						
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D/**D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110								
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D/**D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P- DS&D 06/09/18								
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D/**D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **DS&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6								
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18					T- 03/07/18	P 05/07/18 F-PI Moisture			T- 10/07/18	P 11/07/18 P-PI	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI			T- 06/08/18	N/A F2/L6								

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Cyngor Dinas Casnewydd

		P-DS&D 06/09/18						08/08/18 P- DS&DS 31/08/18				08/08/18 P-DS&D 06/09/18						15/08/18												
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D/** D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78								
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 06/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D/** D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122								
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D/** D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6								
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18								
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6								
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6								
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125								
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18								
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90						
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18	T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18						
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7								
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18			T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 13/09/18								

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Streetscene
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Permeability

Grid Ref	Result – K_y at 20°C	Date Sampled	Comments	Date Testing complete
C2-L1	$1.4x10^{-10}$m/s $9.6x10^{-11}$m/s	19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3	$9.7x10^{-11}$m/s	22/06/18		P 31/08/18
D2-L4	$6.8x10^{-10}$m/s	27/06/18		P 31/08/18
F3-L1	$1.6x10^{-10}$m/s	04/07/18		P 31/08/18
F4-L2	$1.1x10^{-10}$m/s	05/07/18	Miss named E4L2	P 19/09/18
D4L-9	$1.1x10^{-10}$m/s	10/07/18		P 06/09/18
E5-L2	$3.0x10^{-11}$m/s	12/07/18		P 19/09/18
E3-L3	$1.2x10^{-10}$m/s	18/07/18		P 31/08/18
D3-L1	$6.1x10^{-11}$m/s	20/07/18		P 25/09/18
E2-L4	$9.0x10^{-11}$m/s	24/07/18		P 25/09/18
F2-L5	$4.2x10^{-10}$m/s	26/07/18		P 19/09/18
E3-L5		01/08/18		
G2-L6		06/08/18		
C1-L7		17/08/18		
C2-L7		20/08/18		
D2L8		06/09/18		
C3L5		13/09/18		

Bund

Layer	Ref	Date	Pass/Fail
A1L1	D&MC	02/10/18	P – S125 03/10/18
B3B1	MC&PI/DS&D/D&MC	04/10/18	P-S150 08/10/18
G5B1	MC&PI /D&MC	02/10/18	P-S150 08/10/18
E5B2	D&MC	03/10/18	P-S150 08/10/18
C5B2	D&MC	04/10/18	P-S150 08/10/18

Streetscene
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Appendix 2 - Test Results - Permeability Tests

Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1756**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**02/10/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L5-C1	Core 2 A1-L1-C1			
Bulk Density	1.99	2.06			
Moisture Content	22	21			
Dry Density	1.64	1.71			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	4.8	2.3			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 03/10/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1790**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**52/10/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B3-B1-C1	Core 2 G5-B1-C1	Core 3 E5-B2-C1	Core 4 C5-B2-C1	
Bulk Density	2.09	2.08	2.08	2.09	
Moisture Content	19	19	19	21	
Dry Density	1.76	1.75	1.76	1.73	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.6	2.9	3.2	1.2	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 07/10/2018
			R Anstee, Materials and Field Testing Director	Fig

Streetscene
Y-Strydynun

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Appendix 4 – Field Logs

Available on request

Streetscene
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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1757	B1-L5 02.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1758	B1-L5 02.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1759	B1-L5 02.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1760	A1-L1 02.10.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1761	A1-L1 02.10.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1762	A1-L1 02.10.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	125	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1791	B3-B1 05.10.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1792	B3-B1 05.10.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1793	B3-B1 05.10.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1794	G5-B1 05.10.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1795	G5-B1 05.10.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1796	G5-B1 05.10.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1797	E5-B2 05.10.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1798	E5-B2 05.10.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1799	E5-B2 05.10.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1800	C5-B2 05.10.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1801	C5-B2 05.10.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1802	C5-B2 05.10.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	

cjassociates
King Road Avenue, Bristol, BS11 9HF
Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 07/10/2018

Fig.

Streetscene
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Casnewydd

Appendix 6 – PI, PL, MC, LL Results

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13211

Number of samples submitted for testing:	8	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	3	test(s)
Grading	3	test(s)
Date (s) sampled and received at laboratory:	22	Aug-18
Date of receipt of testing instructions	22	Aug-18
Date testing started:	23	Aug-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m3	Density dry Mg/m3	w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
B3 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	46	20	26		
B4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	46	21	25		
C3 L3	GT8	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.7	100	47	21	26		
C4 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	49	20	29		
C5 L3	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		B3L3	B	Dark grey silty CLAY	2.68	2
GT4		B4L3	B	Dark grey silty CLAY with rare pyrite	2.70	2
GT6		C3L3	B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

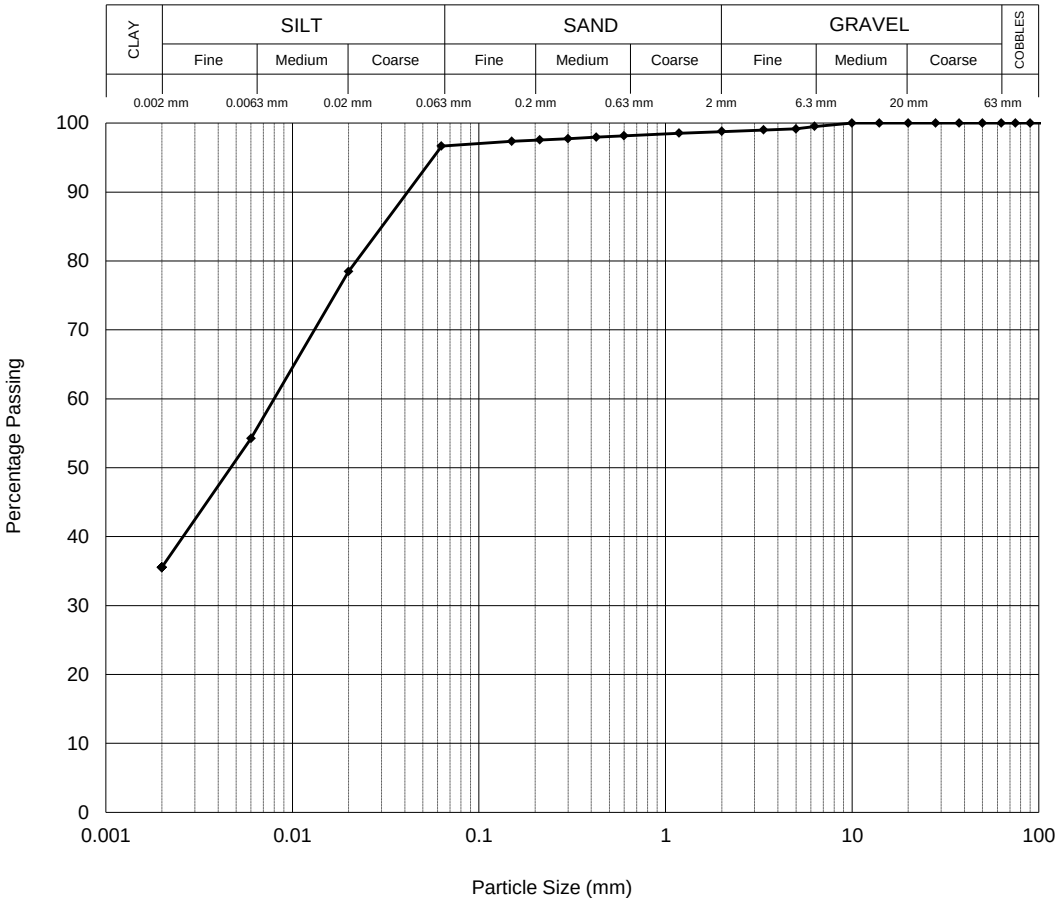
BH / TP No.	GT2
Sample Ref	B3L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	54
2 µm	36

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	61
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

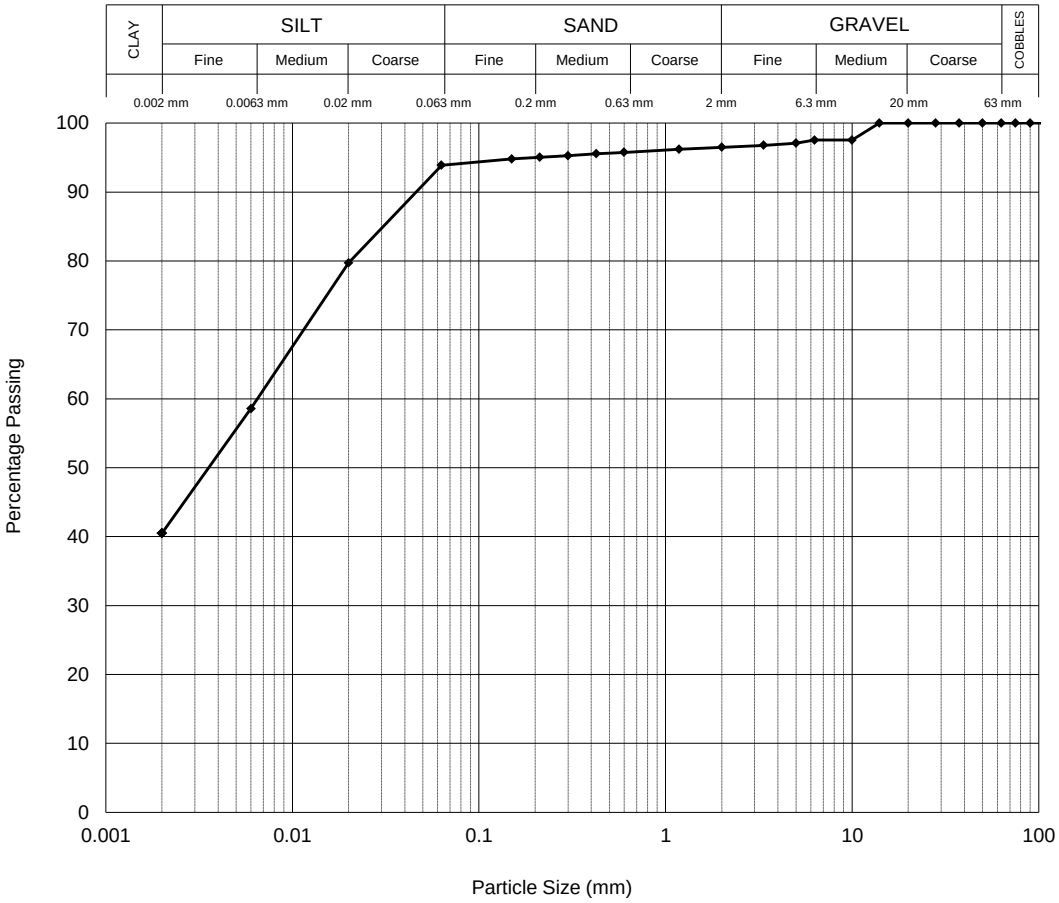
BH / TP No.	GT4
Sample Ref	B4L3
Sample Type	B

Description

Dark grey silty CLAY with rare pyrite

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	97
3.35 mm	97
2.00 mm	97
1.18 mm	96
600 µm	96
425 µm	96
300 µm	95
212 µm	95
150 µm	95
63 µm	94



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	59
2 µm	40
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	3
Sand	3
Silt	53
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

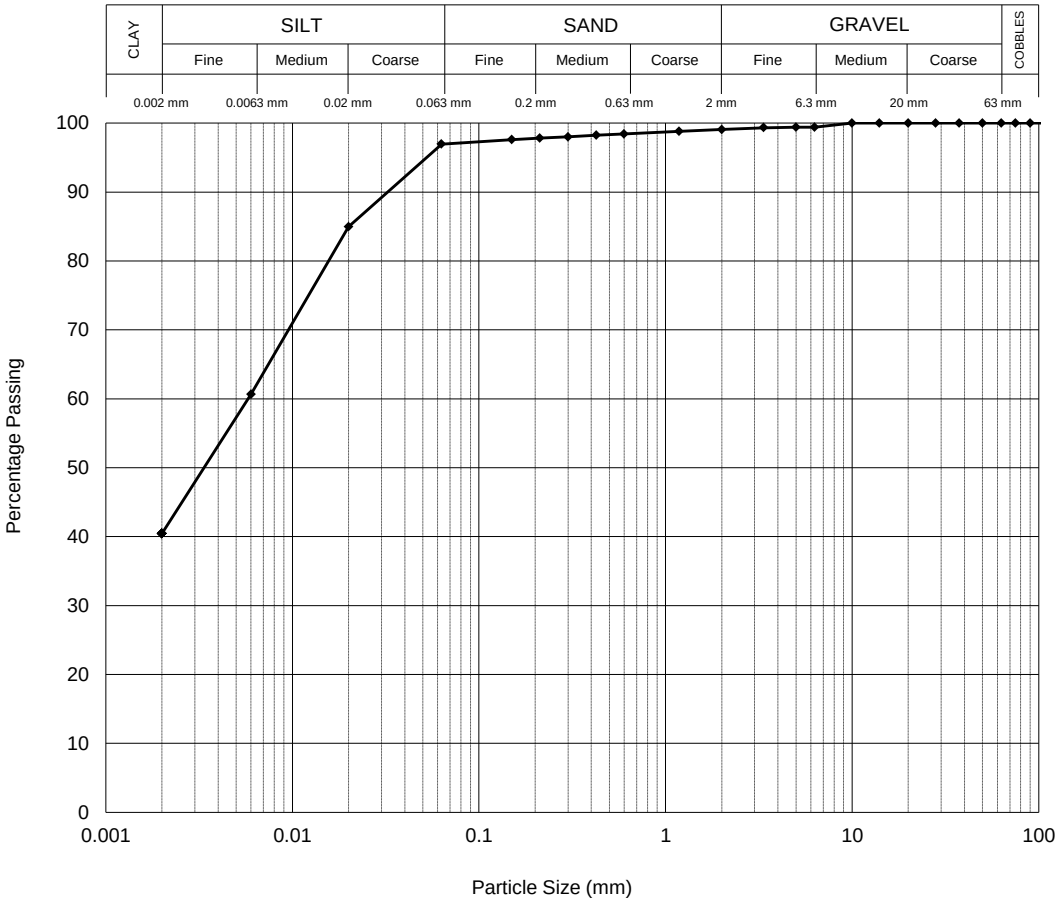
BH / TP No.	GT6
Sample Ref	C3L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13219

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	1	test(s)
Atterberg Limit	1	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	24	Aug-18
Date of receipt of testing instructions	24	Aug-18
Date testing started:	24	Aug-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B2 L9	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.7	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		B2L9	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28010

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

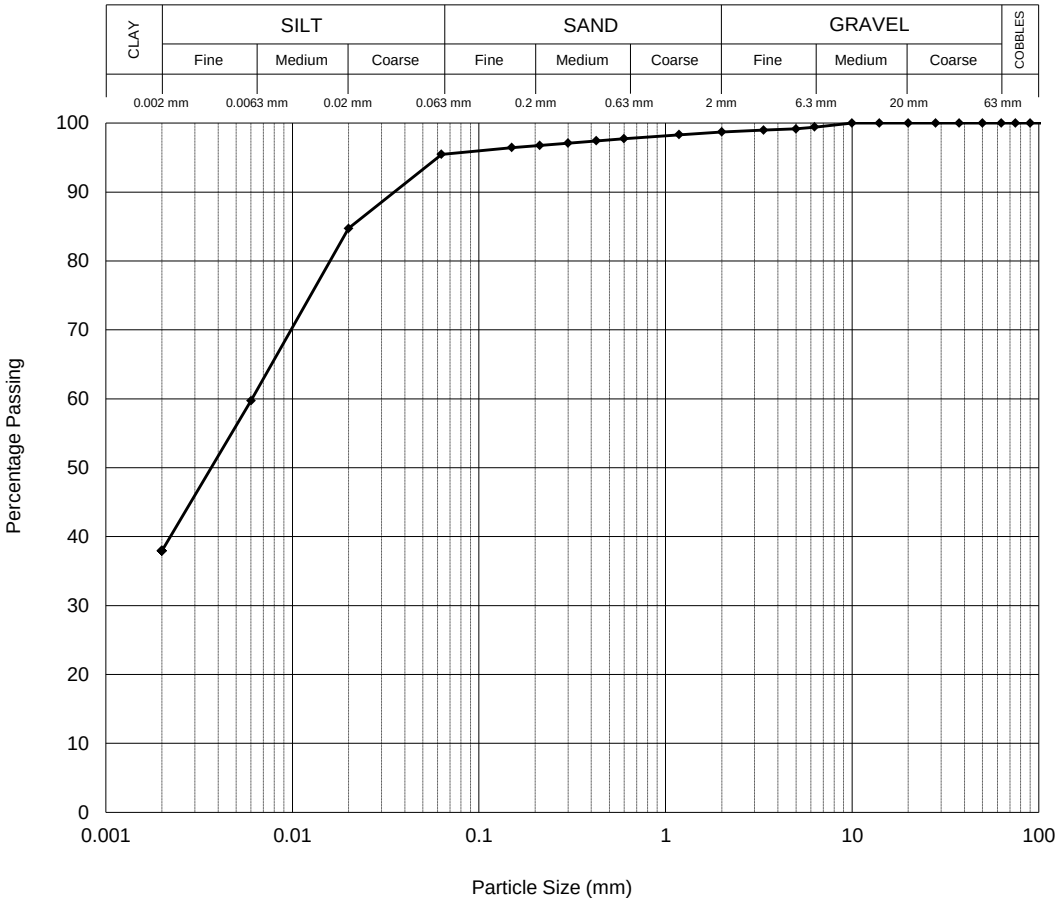
BH / TP No.	GT2
Sample Ref	B2L9
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	97
300 µm	97
212 µm	97
150 µm	96
63 µm	95



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	60
2 µm	38
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	58
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28010

Project Name:

DOCKSWAY CELL 4
AG0390

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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13235

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	1	test(s)
Atterberg Limit	1	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	3	Sep-18
Date of receipt of testing instructions	3	Sep-18
Date testing started:	5	Sep-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D3 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
D3L2		GT2	B	Dark grey silty CLAY	2.67	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28029

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

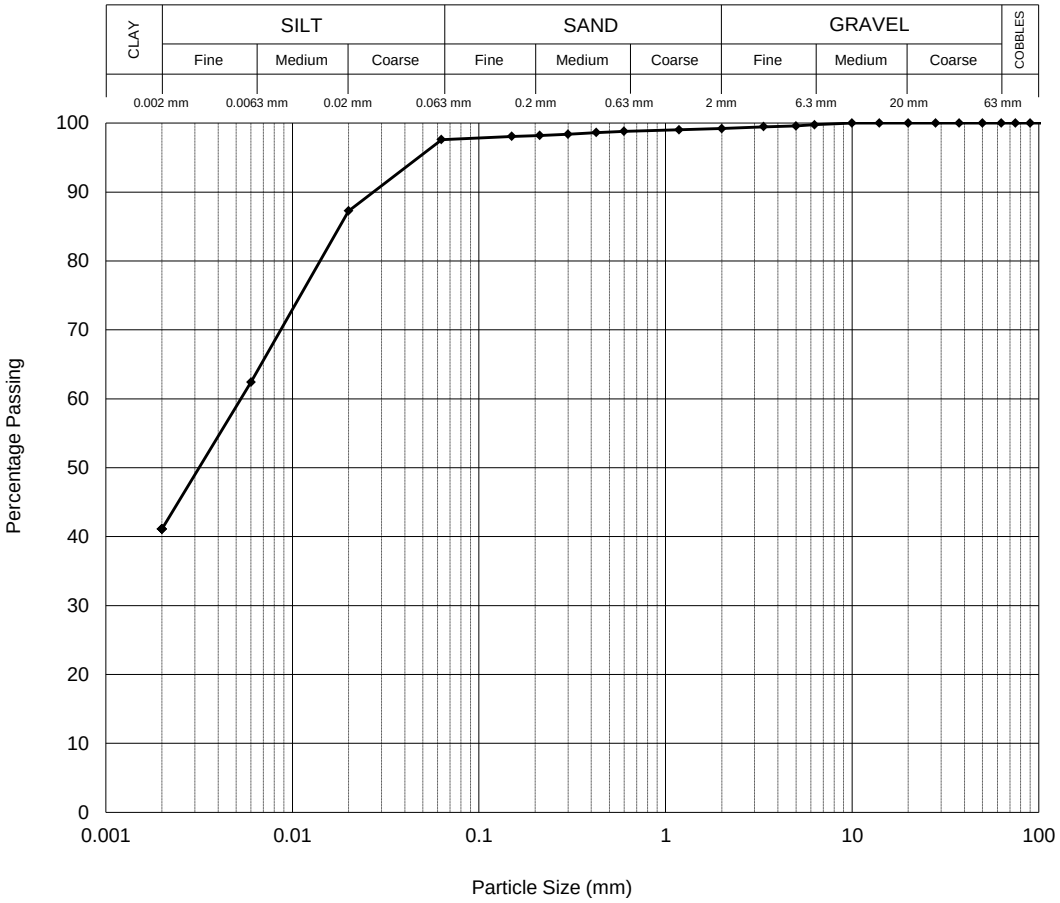
BH / TP No.	D3L2
Sample Ref	GT2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	62
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28029

Project Name:

DOCKSWAY CELL 4
AG0390

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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13239

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	5	Sep-18
Date of receipt of testing instructions	5	Sep-18
Date testing started:	6	Sep-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	48	21	27		
B2 L10	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	46	20	26		
C2 L9	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.6	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

1128 - Particle Density Summary - 28030.XLSM

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
C2L9		GT4	B	Dark grey silty CLAY	2.64	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28030

Project Name:

DOCKSWAY CELL 4
AG0390

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GL:Version 1.00 - 30/12/1899

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

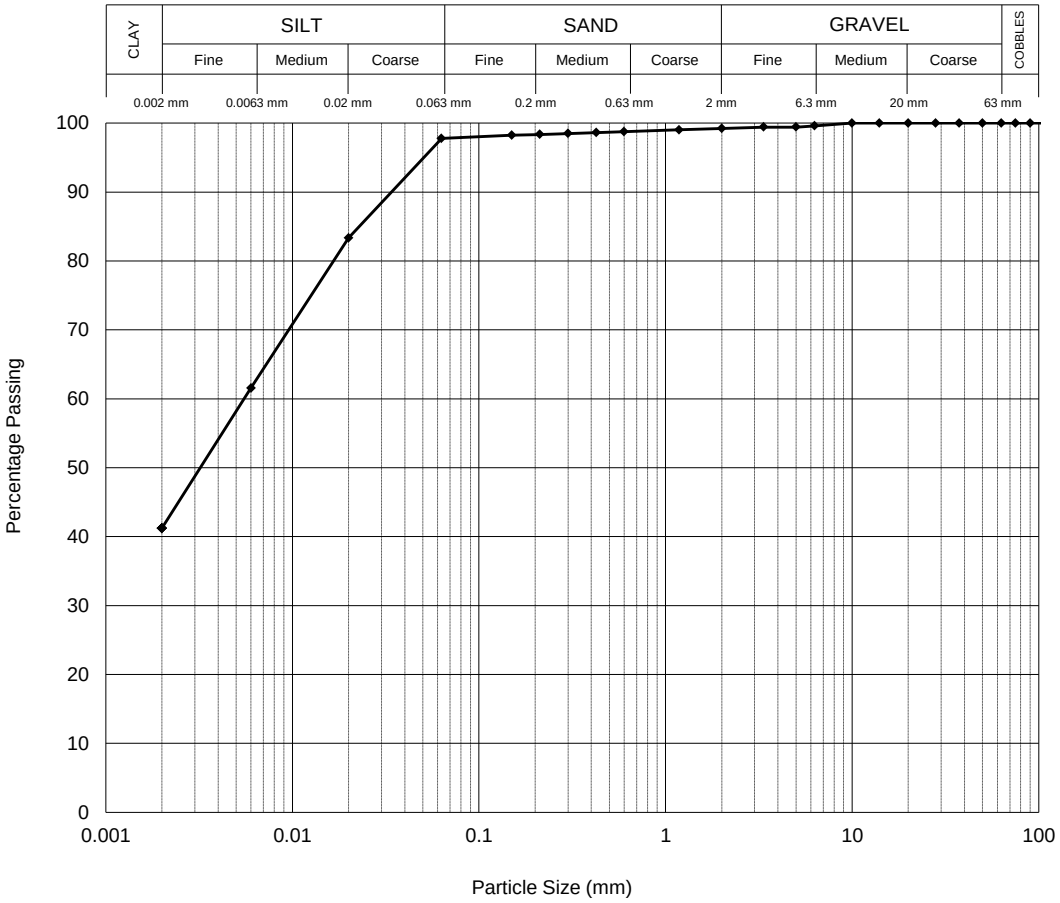
BH / TP No.	C2L9
Sample Ref	GT4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	62
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	57
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28030

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13245

Number of samples submitted for testing:	3	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	7	Sep-18
Date of receipt of testing instructions	7	Sep-18
Date testing started:	11	Sep-18
Date of issue:	3	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
K Maid
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D3 L3	GT1	0.00		B	Dark grey slightly sandy CLAY			20.3	100	51	21	30		
D4 L3	GT3	0.00		B	Dark grey slightly sandy CLAY			21.3	100	50	22	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
26/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D3 L3	B	Dark grey clayey SILT.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
27/09/2018

Project Number:

GEO / 28054

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

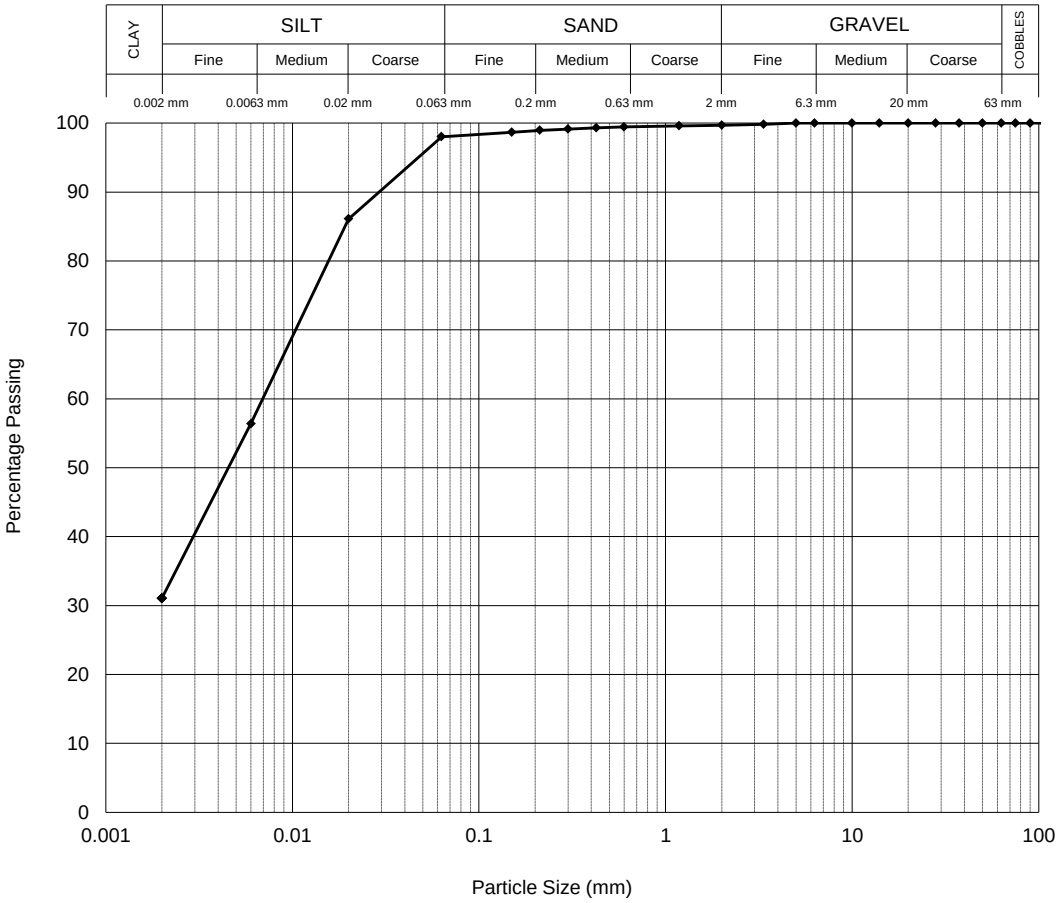
BH / TP No.	GT2
Sample Ref	D3 L3
Sample Type	B

Description

Dark grey clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	56
2 µm	31

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	67
Clay	31

Checked and Approved by

S Burke

S Burke - Senior Technician
27/09/2018

Project Number:

GEO / 28054

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 L4	GT4	0.00		B	Dark grey slightly sandy CLAY			20.7	100	49	22	27		
B4 L4	GT2	0.00		B	Dark grey slightly sandy CLAY			21.4	100	47	21	26		
D2 L9	GT1	0.00		B	Dark grey slightly sandy CLAY			21.5	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
28/09/2018	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13251

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	12	Sep-18
Date of receipt of testing instructions	12	Sep-18
Date testing started:	13	Sep-18
Date of issue:	3	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 L4	GT4	0.00		B	Dark grey slightly sandy CLAY			20.7	100	49	22	27		
B4 L4	GT2	0.00		B	Dark grey slightly sandy CLAY			21.4	100	47	21	26		
D2 L9	GT1	0.00		B	Dark grey slightly sandy CLAY			21.5	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
28/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D2 L9	B	Dark grey clayey SILT.	2.65	2
GT5		B3 L4	B	Dark grey clayey SILT.	2.65	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
28/09/2018

Project Number:

GEO / 28053

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

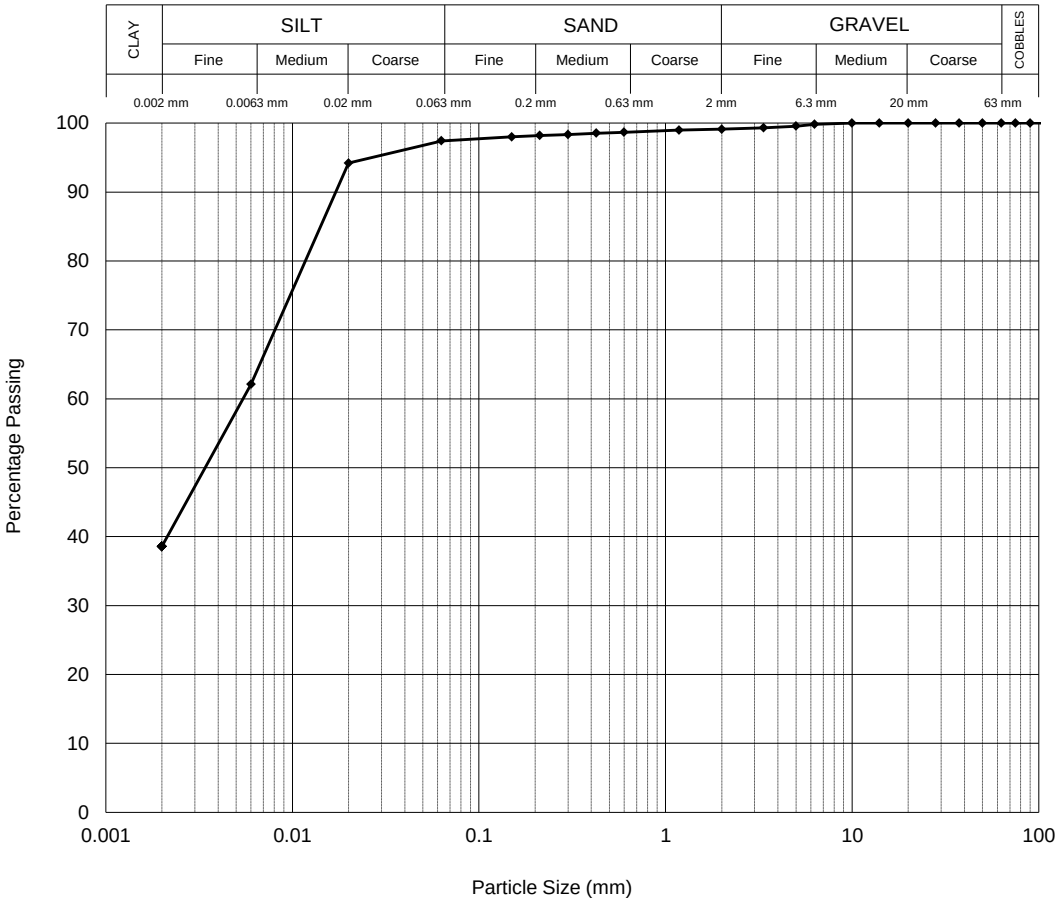
BH / TP No.	GT2
Sample Ref	D2 L9
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	94
6 µm	62
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	59
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
28/09/2018

Project Number:

GEO / 28053

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

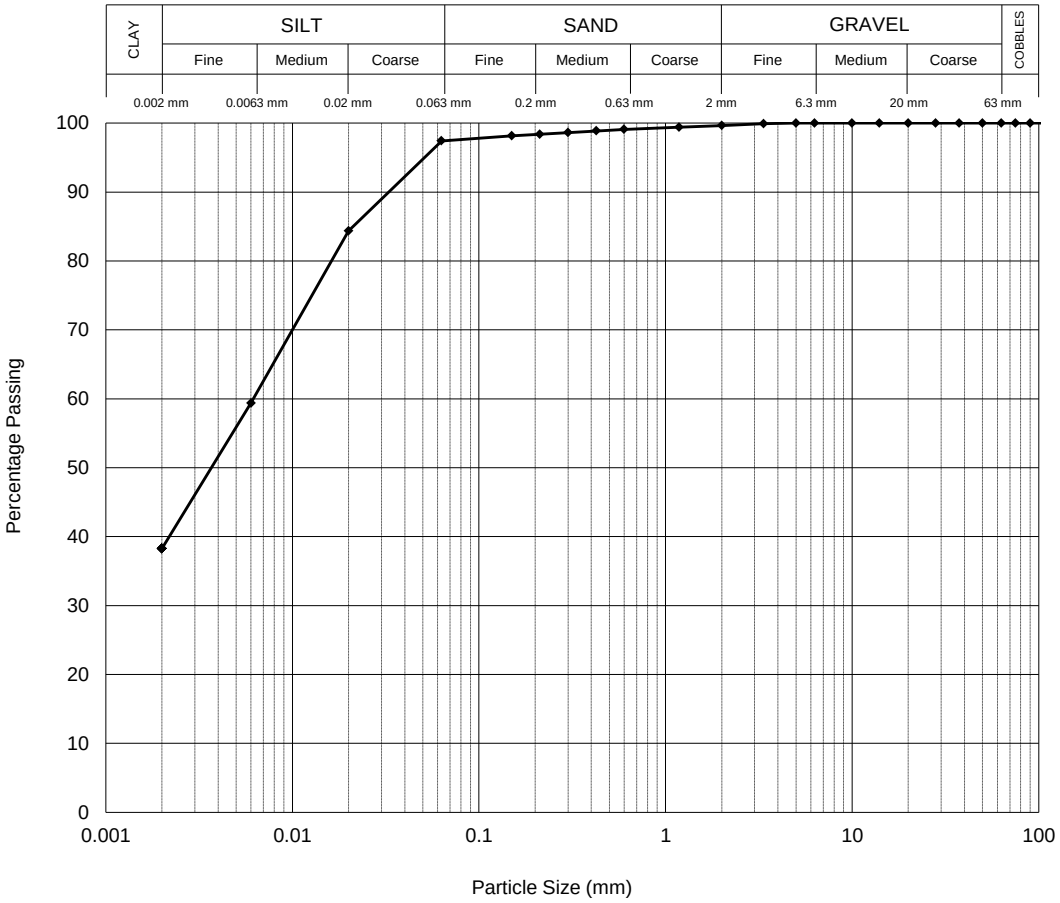
BH / TP No.	GT5
Sample Ref	B3 L4
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	59
2 µm	38
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	59
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
28/09/2018

Project Number:

GEO / 28053

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C3 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			20.7	100	50	22	28		
C4 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			21.2	100	49	22	27		
C5 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			20.9	100	50	21	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
28/09/2018	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D3 L4	GT1	0.00		B	Dark grey slightly sandy CLAY			21.8	100	47	20	27		
D4 L4	GT3	0.00		B	Dark grey slightly sandy CLAY			22.0	100	48	21	27		
D5 L3	GT4	0.00		B	Dark grey slightly sandy CLAY			21.4	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
28/09/2018	Lisa Maiden	1
		sheet 1

Streetscene
Y-Strydynun

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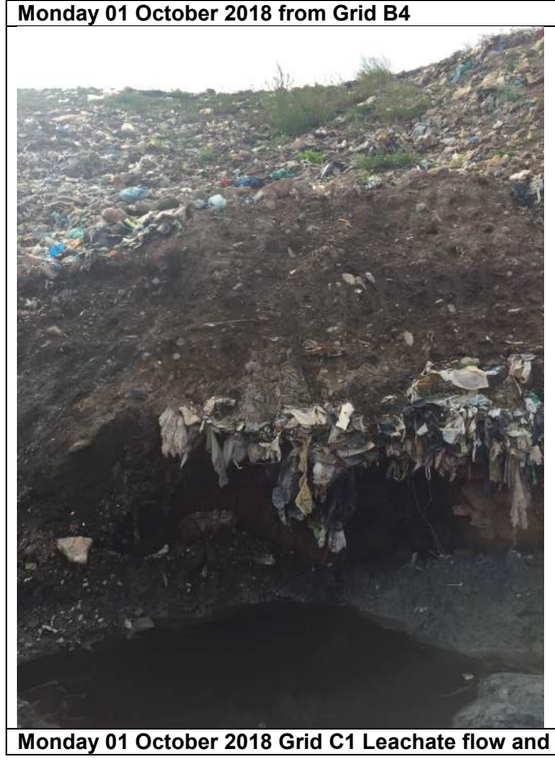
Appendix 7 – Photographs

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Monday 01 October 2018 from Grid B4



Monday 01 October 2018 Grid C1 Leachate flow and sump



Friday 05 October 2018 Batter to adjoining cell weathering and perched water table

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Tuesday 02 October 2018 from Grid D1 levelling within Grids D1, C1 and B1



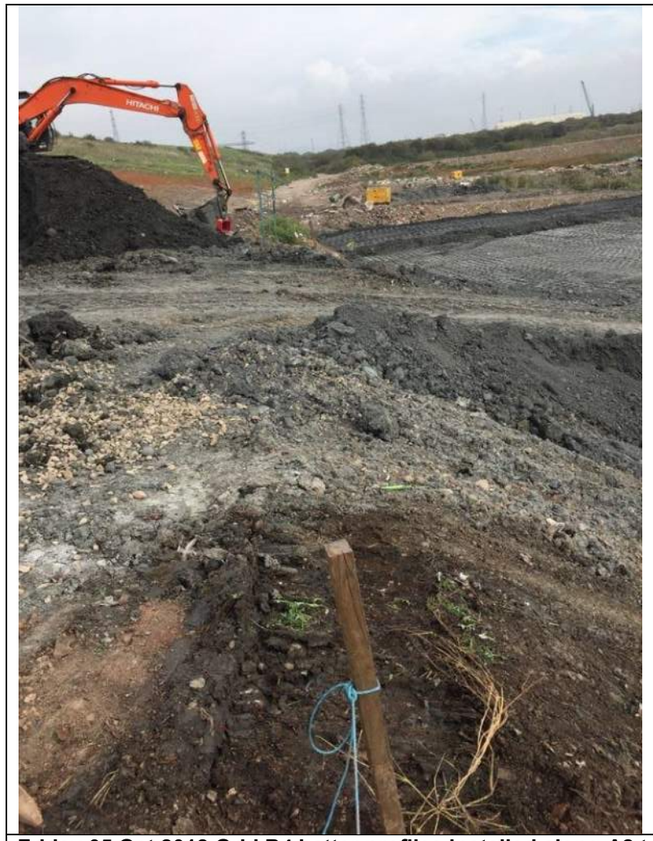
Thursday 04 October 2018 Grid A2 batter work commenced layer 1



Wednesday 03 October 2018 Grid G5 bund work commenced layer 1

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Friday 05 Oct 2018 Grid B4 batter profiles installed along A2 to B5 to confirm 1.2m clay installed onto batter.

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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 17 WE 14/10/18

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Newport/Casnewydd
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Project Ref: 2506
Date: 14-10-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		14-10-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

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Contents

1.0 Introduction

2.0 Weather

3.0 Progress For the Week

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3.2 Work – progress
3.3 Layer 1
3.4 Layer 2
3.5 Layer 3
3.6 Layer 4

4.0 Testing

4.1 Core Cutter Samples
4.2 Permeability Samples
4.3 MDD and OMC
4.4 LL, PL, PI, MC
4.5 Hand Shear Vane

5.0 Summary of results

5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

Appendix

1. Progression Plan
2. Test Results
3. Permeability Tests
4. Moisture content/dry density for Compaction
5. Field Logs
6. Hand Shear Vane Logs
7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

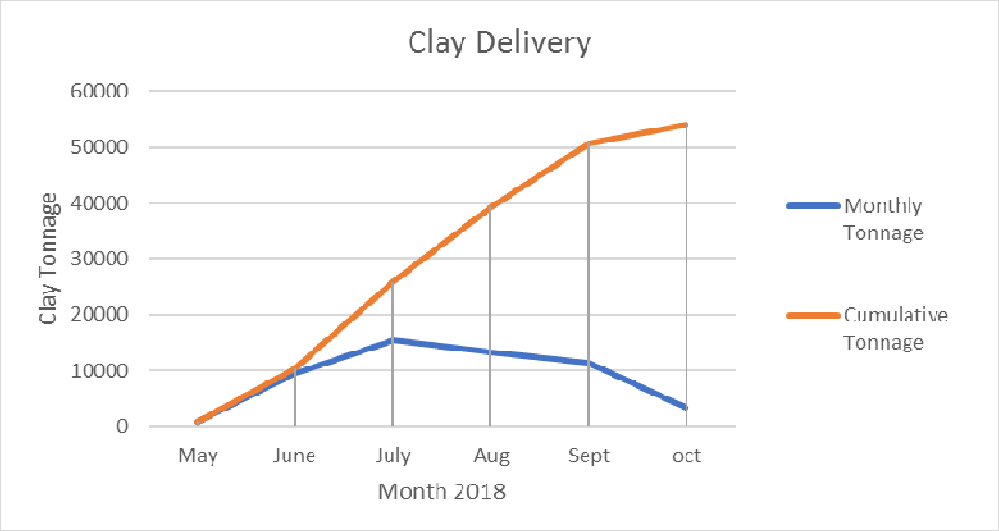
No Rain over the weekend and dry Monday to Thursday, heavy rain on Friday.

3.0 Progress for the week

3.1 Stockpile

Material arriving at the stockpile has been dry with final delivery on Thursday.

Up to the 12 October 2018, 54,123.4 tonnes of material was delivered to site. The working hours this week were 730am to 1600pm.



3.2 Work Progress

Work was undertaken to the level 6 on the bunds and level 3 on the batter.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal.

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Kate Riley (PBA), Paul Jeffery (PBA), Andrew Miles (Jim Davies), Ian Fisher (NCC) and Council Operation team attended site Wednesday 10 October 2018.

Testing by CJ Associates was undertaken Wednesday 10 October 2018.

Testing was undertaken on Level 3 of the bund and batter. Due to anticipated weather for Friday. work on the bund was required to complete for level 4, 5 and 6 Thursday, as access to the top of the bund may not be safe following the rain therefore testing was not practical.

Agreement to install batter material B2 to B5, 1.2m thick to 2m then reduce to minimum 500mm to the top of the batter level.

Plant on site two 10-ton front loader, 2 excavators, roller and bowser.

3.3a Additional Layers
No work undertaken
3.3b Levelling the Area
No work undertaken
3.3 Layer 1
No work undertaken
3.4 Layer 2
Bund and Batter
3.5 Layer 3
Bund and Batter
3.6 Layer 4
Bund
3.7 Layer 5
Bund
3.8 Layer +6
Bund layer 6
4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

2 core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
2 results with no spare core tests received as per the Appendix 1 and 2.

Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

No samples or spares were taken this week.
Results have been received and are shown in the appendices.

4.3 MC and PI,

Details received all within tolerance for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 150 KN/ m^2 recorded.

5.0 Results Summary

All test results were passed.

6.0 Problems Encountered

Permeability test results for C3L5 were miss named by the lab. The correct details are shown in the Progress Plan.

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access Tuesday 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor did not attended site this week to pump leachate out the adjacent cell. There was a consistent flow from entering the site from the adjacent cell which was pumped out and deposited on to the adjacent active tip.
Some weathering of the cut face surface has been noted.

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-3	N/A B1L-5	N/A B1L-5	MC&PI/D&MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1		L2A		L2B		L2				L3		L4				L5		L5A		L6		L7		L8		L9		L10	
	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														

Streetscene
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NP20 4UR

Newport City Council
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Date																													
A2																													
Date																													
A3																													
Date																													
B1	MC&PI/D S&D/ D&MC	P Sh-125 P-PI 03/09/18 P- DS&D 19/09/18	MC&PI/DS& D/D&MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/ D&MC	P Sh-150			MC&PI/ D&MC	P-Sh-90	N/A	N/A			MC&PI/ D&MC	S-150											
Date	T- 13/06/18	P 15/08/18	T- 14/06/18	P 15/08/18 P-PI 03/09/18 P-DS&D 31/08/18	T- 16/06/18	N/A B1L2	T- 16/06/18	P 20/08/18 P-PI 03/09/18 P-DS&D 19/09/18			T- 04/09/18	P- 06/09/18 P-PI 15/09/18	T- 28/09/18	N/A			T- 28/09/18	P- 03-10-18											
B2	MC&PI/D &MC	P Sh-max					MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120			MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96	MC&PI/ DS&D/D&MC And S	P Sh-115	MC&PI/ DS&D/D&MC And S	P Sh-122	MC&PI/D &MC And S	P-Sh-125
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P- 03/08/18 P-PI 03/09/18	T 23/08/18	P 24/08/18 P-PI 15/09/18 P-DS&D 11/10/18	T 24/08/18	P 28/08/18 P-PI 15/09/18 P-DS 01/10/18	T 04/09/18	P- 06/09/18 P-PI 15/09/18
B3	MC&PI/D S&D/D&MC	P Sh-70					MC&PI/D S&D/D&MC	P Sh-105			MC&PI/D S&D/D&MC	P Sh-94	MC&PI/D S&D/D&MC	P Sh-95			MC&PI/D S&D/D&MC	P Sh-105											
Date	T- 19/06/18	P 20/07/18 F-PI Moistur 08/08/18 P- DS 24/08/18					T- 02/08/18	P 03/08/18 P-PI 03/08/18 P-DS&D 03/09/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T- 12/09/18	P 13/09/18 P-PI 01/10/18			T- 19/09/18	P 20/09/18 P-PI 11/10/18											
B4	MC&PI/D &MC	P Sh-86					D&MC	P S-100			MC&PI/D S&D/D&MC	P Sh-75	MC&PI /D&MC	P Sh-140			MC&PI/ DS&D/D&MC	P Sh-150											
Date	T- 19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T- 12/09/18	P 13/09/18 P-PI 01/10/18 P-DS&D 03/10/18			T- 19/09/18	P 20/09/18 P-PI 11/10/18											
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2	N/A C5L4	N/A C5L4	N/A B4L3	N/A B4L3	N/A B4L4	N/A B4L4															
Date	T- 19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2	N/A 23/08/18	N/A 24/08/18	N/A B4L3	N/A B4L3	N/A B4L4 12/09/18	N/A B4L4 13/09/18															
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120			MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/ D&MC	P Sh-89	MC&PI/ DS&D/D &MC	P Sh-125					
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18 P-DS 11/10/18					
C2	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/**D&S**/ /D&MC And S	P Sh-max			MC&PI/**D&S**/ /D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D&S**/ D&MC And S	Sh-106			MC&PI/ **DS&D/** D&MC And S	Sh-80	MC&PI/ **DS&D/** D&MC And S	Sh-145	MC&PI/D& MC	P-116	MC&PI/ DS&D/D&MC And S	P-Sh-150		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18 P-DS 11/10/18	T- 28/07/18	P- 29/0818 P-PI 15/09/18	T 04/09/18	P- 06/09/18 P-PI 15/09/18 P-DS 01/10/18		
C3	MC&PI/ **D&S**/D &MC	P Sh- 128					MC&PI/ **D&S**/D &MC	P Sh- 80			MC&PI/ **D&S**/D &MC	P Sh- 150	MC&PI/ **D&S**/D &MC	P Sh- 88			MC&PI/ D&MC	P Sh- 122											
Date	T- 19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T- 02/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T- 30/08/18	P 03/09/18 P-PI 15/09/18 P-DS 11/10/18			T- 13/09/18	P 17/09/18 P-PI 01/10/18											
C4	MC&PI/D S&D/D&MC	Sh- 115					MC&PI/D S&D/D&MC	P Sh- 124			MC&PI/ D&MC	P Sh- 100	MC&PI/ D&MC And S	P Sh-150			MC&PI/ DS&D/D &MC	P Sh- 128											
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T- 02/08/18	P 03/08/18 P-PI 03/09/18 P-DS&D 03/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 28/08/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18 P-PI 01/10/18 P-DS&D 11/10/18											
C5	MC&PI/D &MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100			MC&PI/ D&MC	P Sh- 95											
Date	T- 18/07/18	P 20/07/18 P-PI					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18 P-PI	T 23/08/18	P 24/08/18 P-PI			T- 13/09/18	P 17/09/18 P-PI											

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport City Council
Cyngor Dinas Casnewydd

		08/08/18										15/09/18		15/09/18				01/10/18												
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max	MC&PI/D S&D/D& MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125						
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18 P-DS&D 06/09/18	T-14/08/18	P 16/08/18 P-PI 03/09/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18 P-DS 11/10/18						
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/**D&DS**/ D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122	MC&PI/ **DS&D/** D&MC And S	Sh-78	MC&PI/ **DS&D/** D&MC And S	Sh-121		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	P 22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18 P-DS 11/10/18	T 06/09/ 18	P 07/09/18 P-PI 26/09/18 P-DS 11/10/18	T 10/09/18	P 13/09/18 P-PI 01/10/18 P-DS&D 03/10/18		
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58					MC&PI/ **D&S**/D &MC	P Sh- 106			MC&PI/ **D&S**/D &MC	P Sh- 64	MC&PI/ **D&S**/D &MC	P Sh- 150			MC&PI/ D&MC	P Sh- 118													
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18					T- 03/09/18	P 04/09/18 P-PI 15/09/18 P-DS 01/10/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18 P-DS&D 03/10/18	T- 14/09/18	P-18/09/18 P-PI 01/10/18 P-DS&D 11/10/18			T- 19/09/18	P-20/09/18 P-PI 11/10/18													
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S**/D&MC And S	P Sh-70			MC&PI/ D&MC	P Sh- 80	MC&PI/ D&MC	P Sh- 150			MC&PI/ D&MC	P Sh- 104													
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	P- 04/09/18 P-PI 15/09/18 P-DS 11/10/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18	T- 17/09/18	P-18/09/18 P-PI 01/10/18			T- 19/09/18	P-20/09/18 P-PI 11/10/18													
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142			MC&PI/ D&MC	P Sh- 150	N/A D4/L5	N/A D4/L5			MC&PI/ DS&D/ D&MC	P Sh- 80													
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818 P-PI 15/09/18			T- 17/09/18	P-18/09/18 P-PI 01/10/18	N/A D4/L5	N/A D4/L5			T- 26/09/18	P-27/09/18 P-PI 11/10/18													
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132						
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18	T- 14/08/18	P 16/08/18 P-PI 03/09/18 P-DS&D 19/09/18						
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110								
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P- DS&D 06/09/18								
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **DS&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6								
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18 P-DS&D					T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6								

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

		06/09/18						P- DS&DS 31/08/18				P-DS&D 06/09/18																	
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78							
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78							
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 06/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122							
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6							
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18							
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6							
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6							
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135							
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18							
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125							
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18							
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90					
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18	T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18					
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7							
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18			T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 13/09/18							

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
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NP20 4UR

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Permeability

Grid Ref	Result – K_y at 20°C	Date Sampled	Comments	Date Testing complete
C2-L1	$1.4x10^{-10}$m/s $9.6x10^{-11}$m/s	19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3	$9.7x10^{-11}$m/s	22/06/18		P 31/08/18
D2-L4	$6.8x10^{-10}$m/s	27/06/18		P 31/08/18
F3-L1	$1.6x10^{-10}$m/s	04/07/18		P 31/08/18
F4-L2	$1.1x10^{-10}$m/s	05/07/18	Miss named E4L2	P 19/09/18
D4L-9	$1.1x10^{-10}$m/s	10/07/18		P 06/09/18
E5-L2	$3.0x10^{-11}$m/s	12/07/18		P 19/09/18
E3-L3	$1.2x10^{-10}$m/s	18/07/18		P 31/08/18
D3-L1	$6.1x10^{-11}$m/s	20/07/18		P 25/09/18
E2-L4	$9.0x10^{-11}$m/s	24/07/18		P 25/09/18
F2-L5	$4.2x10^{-10}$m/s	26/07/18		P 19/09/18
E3-L5	$4.4x10^{-11}$m/s	01/08/18		P 11/10/18
G2-L6	$1.6x10^{-10}$m/s	06/08/18		P 11/10/18
C1-L7		17/08/18		
C2-L7		20/08/18		
D2L8	$1.1x10^{-10}$m/s	06/09/18		P 15/10/18
C3L5	$7.8x10^{-11}$m/s	13/09/18	Miss named C3L4	P 15/10/18

Bund

Layer	Ref	Date	Pass/Fail
A1L1	D&MC	02/10/18	P – S125 03/10/18
B3B1	MC&PI/DS&D/D&MC	04/10/18	P-S150 08/10/18
G5B1	MC&PI /D&MC	02/10/18	P-S150 08/10/18
E5B2	MC&PI /D&MC	03/10/18	P-S150 08/10/18
C5B2	MC&PI/DS&D/D&MC	04/10/18	P-S150 08/10/18
E5B3	MC&PI/DS&D/D&MC	10/10/18	P-S150 11/10/18
B3B3	MC&PI/D&MC	10/10/18	P-S150 11/10/18
E5B4, E5B5 &E5B6	N/A – see tests for E5B3- weather required work to progress	11/10/18	N/A

Streetscene
Y-Strydynun

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South Wales/De Cymru
NP20 4UR

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CYNGOR DINAS Casnewydd

Appendix 2 - Test Results - Permeability Tests

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E3L5
Sample Type:	C

Description:
Stiff dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	98.94	98.52
Height	*mm*	100.12	99.70
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.04	2.11
Dry Density	*Mg/m³*	1.66	1.69

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.36	0.99

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	9.8

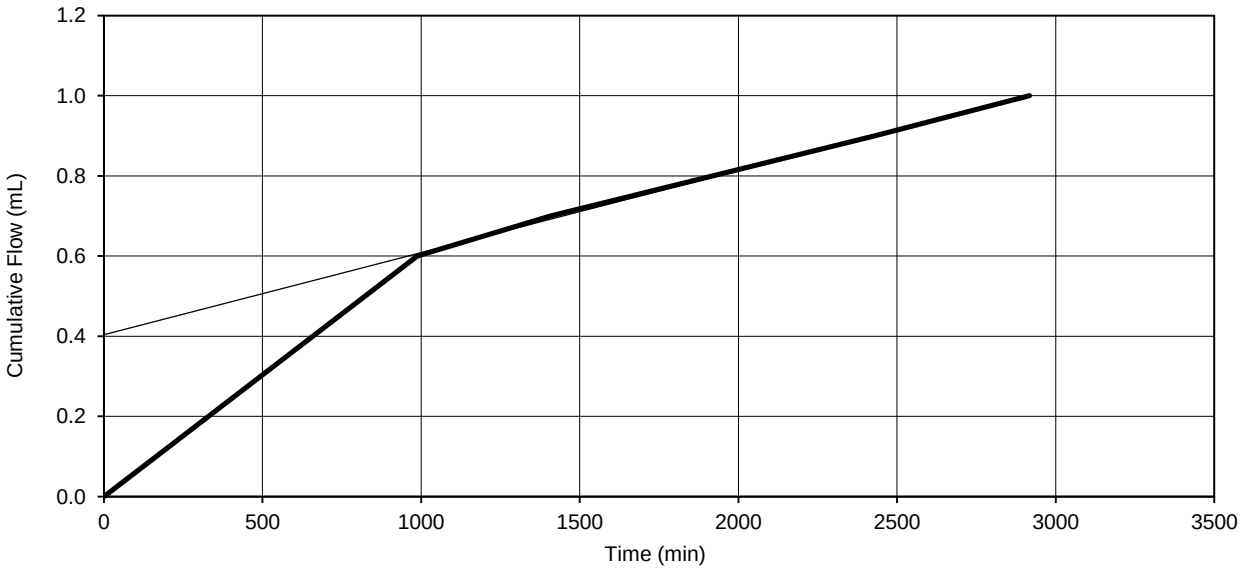
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	5
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 4.4×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
09/10/2018

Project Number:

GEO / 27931

Project Name:

DOCKSWAY CELL 4
AG0390

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BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	G2L6
Sample Type:	C

Description:
Stiff dark grey CLAY.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.35	99.15
Height	*mm*	99.22	99.02
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.07	2.12
Dry Density	*Mg/m³*	1.69	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.64	0.96

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	4.8

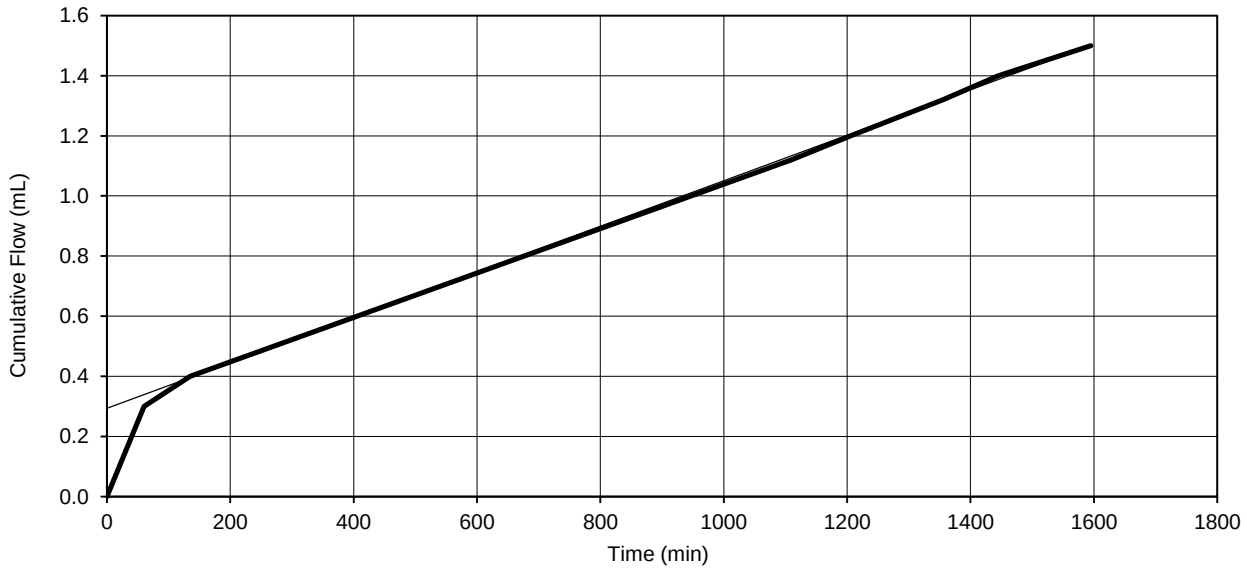
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.6×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
09/10/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.: C3-L4

Miss named C3-L5 WW 15/10/18

Sample Type: C

Description:
Soft dark grey CLAY with rare fine to medium gravel and occasional weakly cemented mudstone up to 10mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	100.34	99.85
Height	*mm*	100.32	99.83
Moisture Content	*%*	20	24
Bulk Density	*Mg/m³*	1.97	2.08
Dry Density	*Mg/m³*	1.65	1.67

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.18	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	11.6

PERMEABILITY STAGE

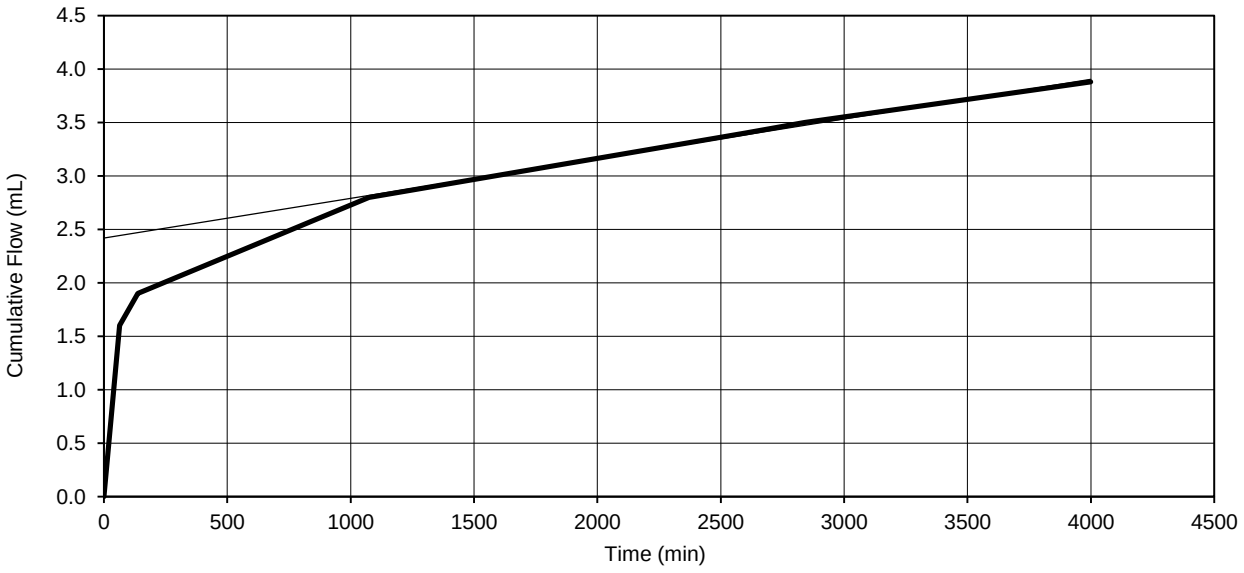
Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	3
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 7.8×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number: **GEO / 28028**

Project Name: **DOCKSWAY CELL 4 AG0390**

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BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	D2L8
Sample Type:	C

Description:
Stiff dark grey CLAY with rare fine to coarse gravel. Occasional weakly cemented mudstone up to 2mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	100.03	99.65
Height	*mm*	100.17	99.79
Moisture Content	*%*	21	25
Bulk Density	*Mg/m³*	2.03	2.12
Dry Density	*Mg/m³*	1.67	1.69

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.53	0.96

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	8.9

PERMEABILITY STAGE

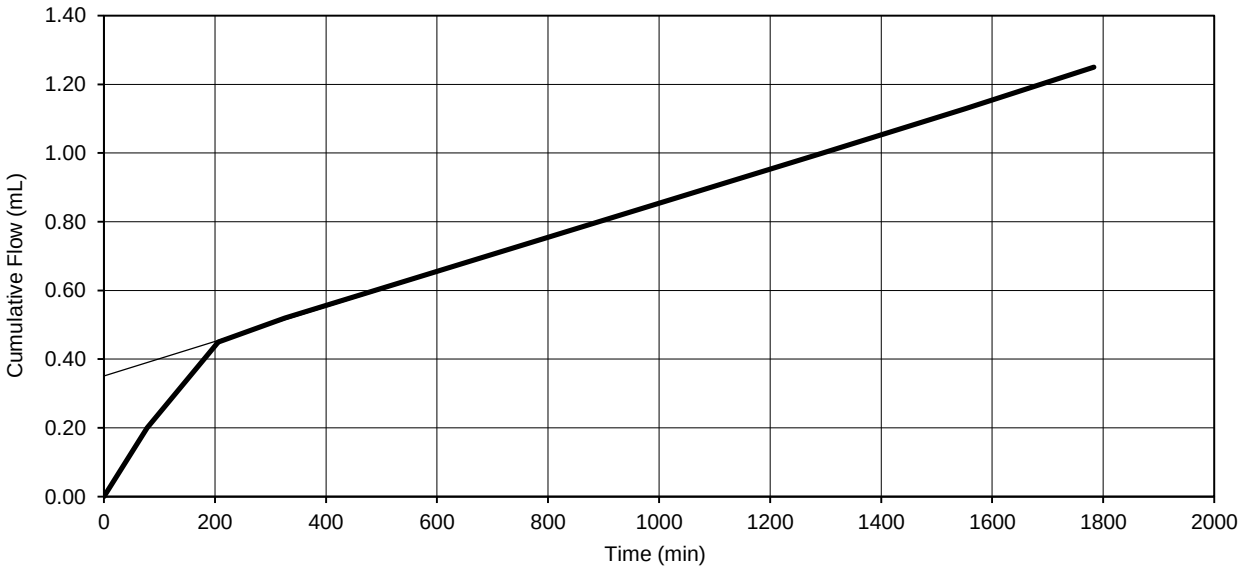
Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	5
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 1.1×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

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Streetscene
Y-Strydynun

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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1833**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**10/10/2018**	Material Source:	**Unknown**
Tested By:	**R Anstee**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B3-B3-C1	Core 2 E3-B3-C1			
Bulk Density	2.04	2.09			
Moisture Content	21	19			
Dry Density	1.69	1.76			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	3.6	2.0			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 11/10/2018	Fig

Streetscene
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Appendix 4 – Field Logs

Available on request

Streetscene
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NP20 4UR

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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1834	B3-B3 10.10.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1835	B3-B3 10.10.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1836	B3-B3 10.10.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1837	E3-B3 10.10.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1838	E3-B3 10.10.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1839	E3-B3 10.10.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver R. Anstee	Date 11/10/2018	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director		

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
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NP20 4UR

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Appendix 6 – PI, PL, MC, LL Results

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	46	21	25		
C1 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	46	22	24		
D1 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		C1L7	B	Dark grey clayey SILT.	2.66	2
GT4		D1L7	B	Dark grey CLAY and SILT.	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1539258931)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

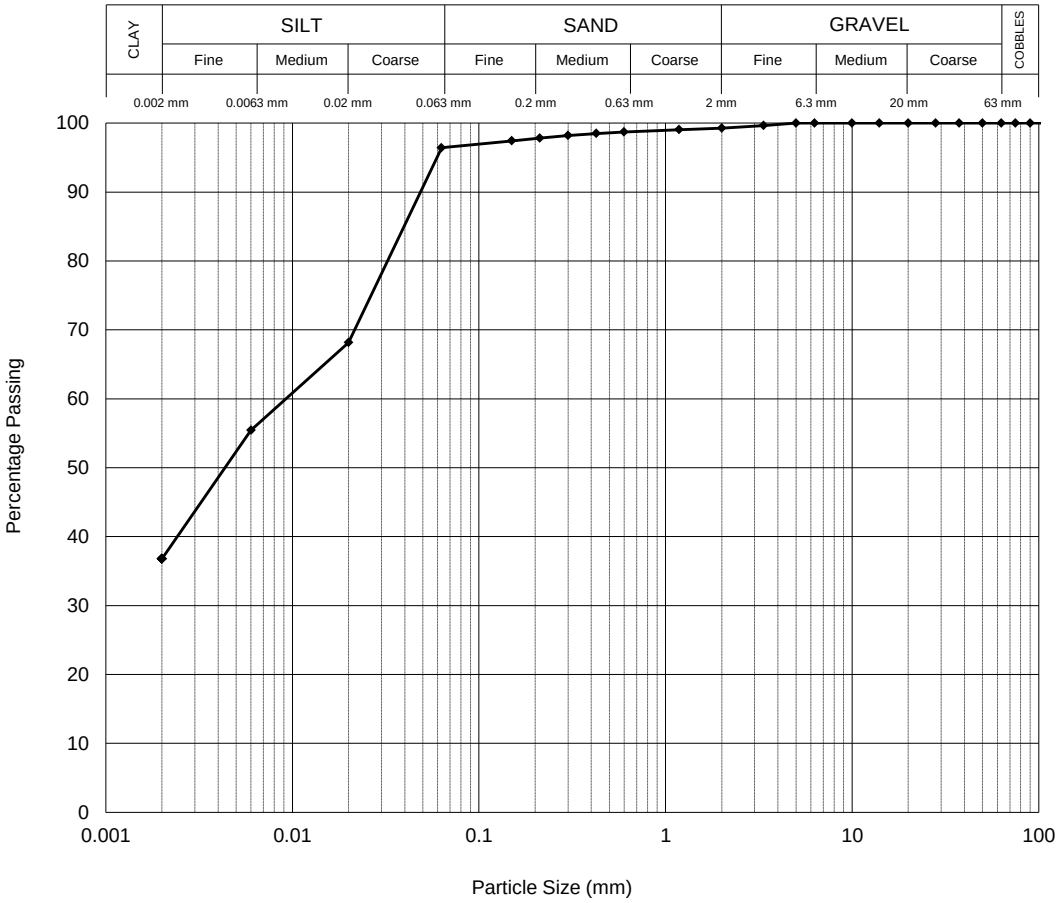
BH / TP No.	GT2
Sample Ref	C1L7
Sample Type	B

Description

Dark grey clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	68
6 µm	55
2 µm	37
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	60
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

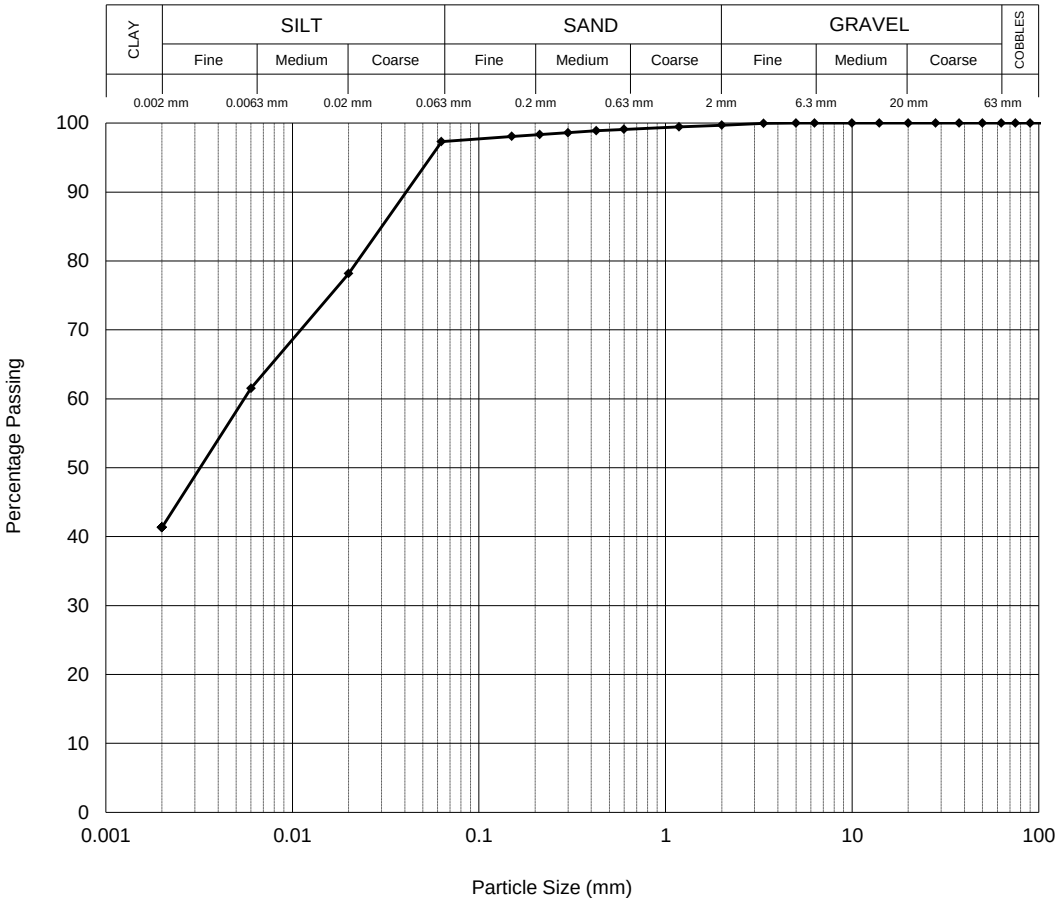
BH / TP No.	GT4
Sample Ref	D1L7
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	62
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C2 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	45	22	23		
D2 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	45	22	23		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
09/02/2018 00:00		1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		C2L7	B	Dark grey CLAY and SILT.	2.71	2
GT4		D2L7	B	Dark grey very clayey SILT.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

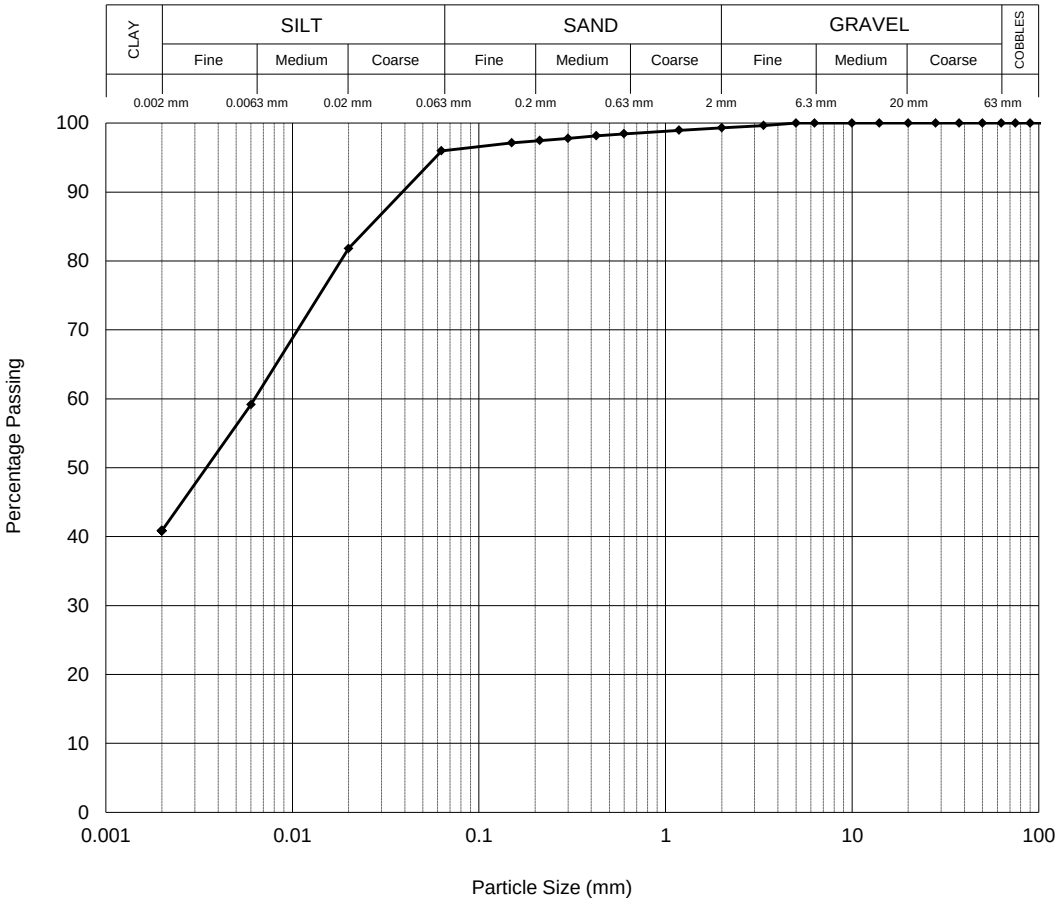
BH / TP No.	GT2
Sample Ref	C2L7
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	82
6 µm	59
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

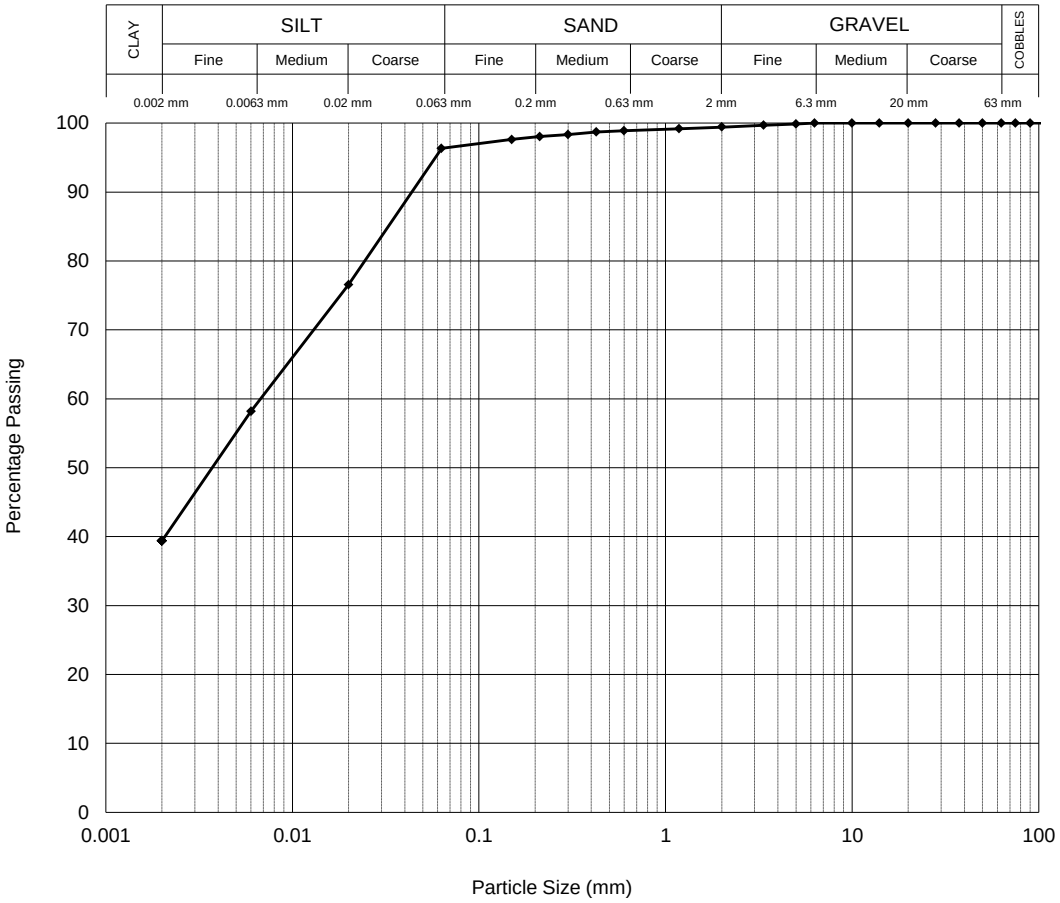
BH / TP No.	GT4
Sample Ref	D2L7
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	77
6 µm	58
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	57
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13215

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	23	Aug-18
Date of receipt of testing instructions	23	Aug-18
Date testing started:	24	Aug-18
Date of issue:	11	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B2 L8	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	45	20	25		
C4 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.4	100	46	21	25		
C5 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		B2L8	B	Dark grey silty CLAY	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28011

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

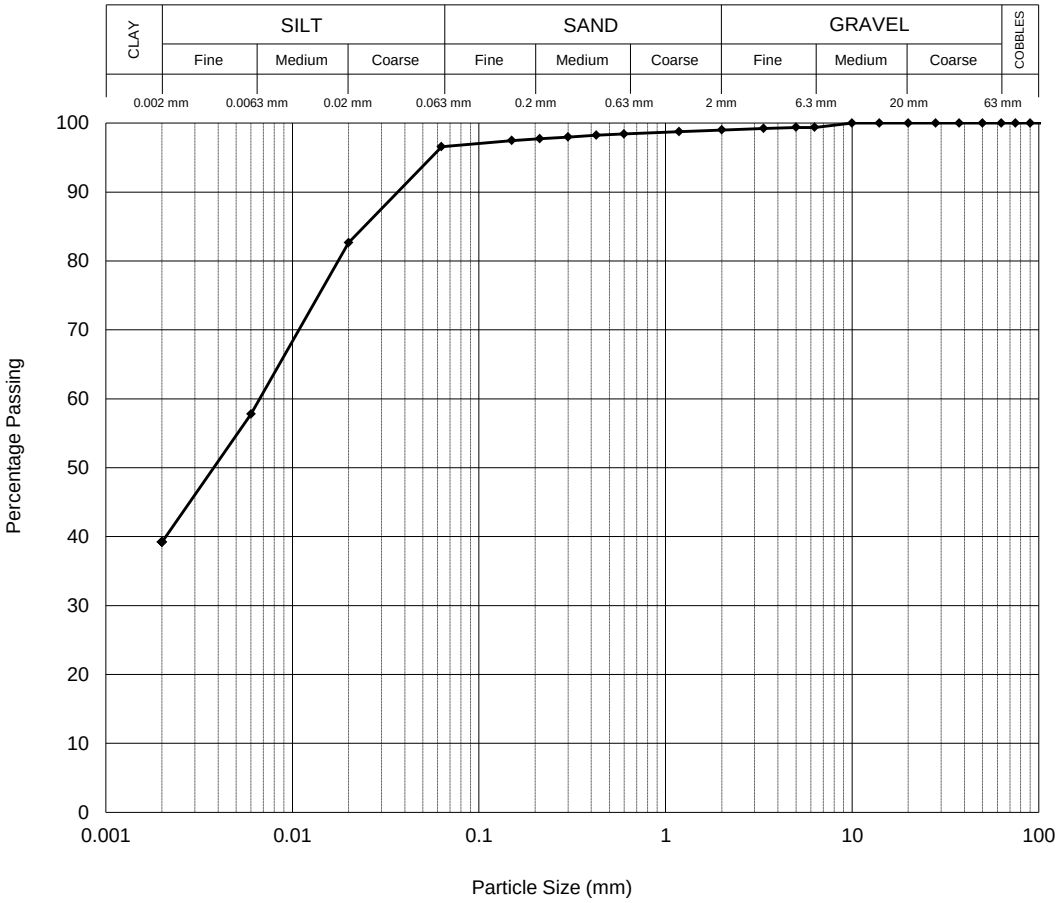
BH / TP No.	GT2
Sample Ref	B2L8
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	58
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28011

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C3 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			16.3	100	48	22	26		
D4 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	45	20	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
C3L4		GT2	B	Dark grey silty CLAY.	2.70	2
D4L2		GT4	B	Dark grey silty CLAY	2.71	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

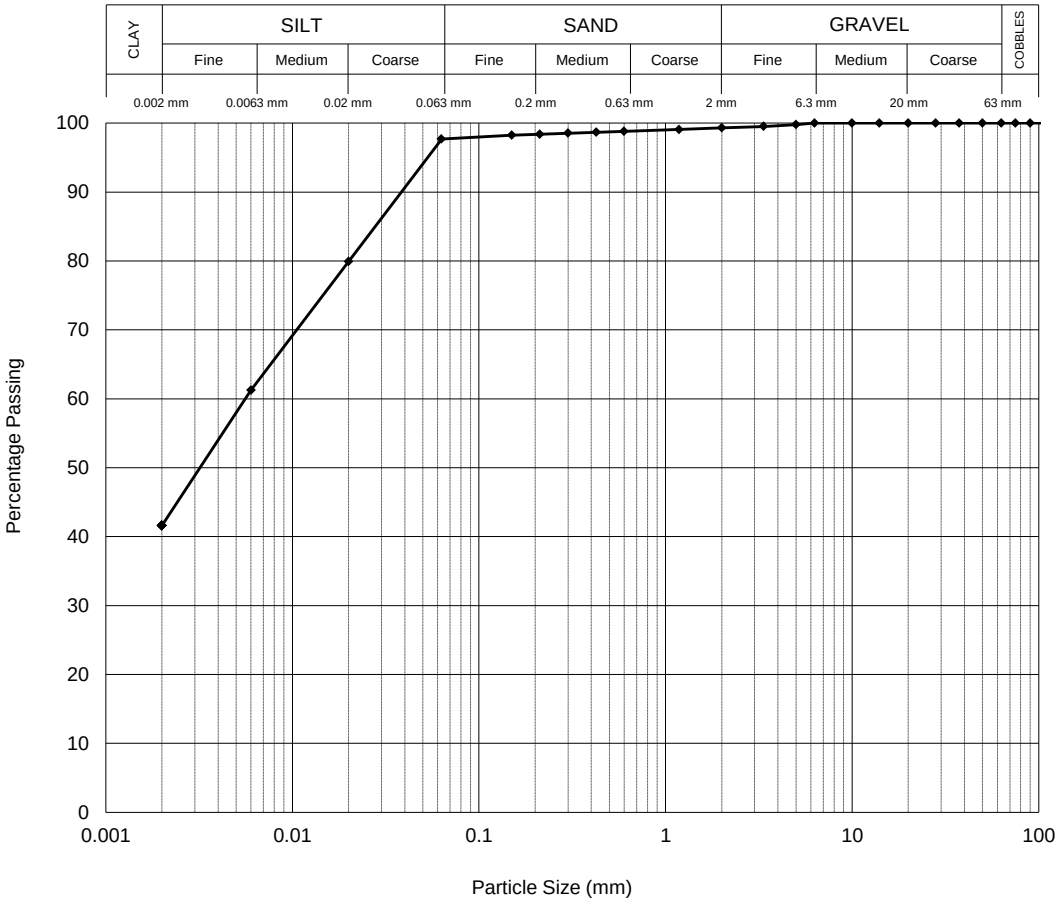
BH / TP No.	C3L4
Sample Ref	GT2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	61
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

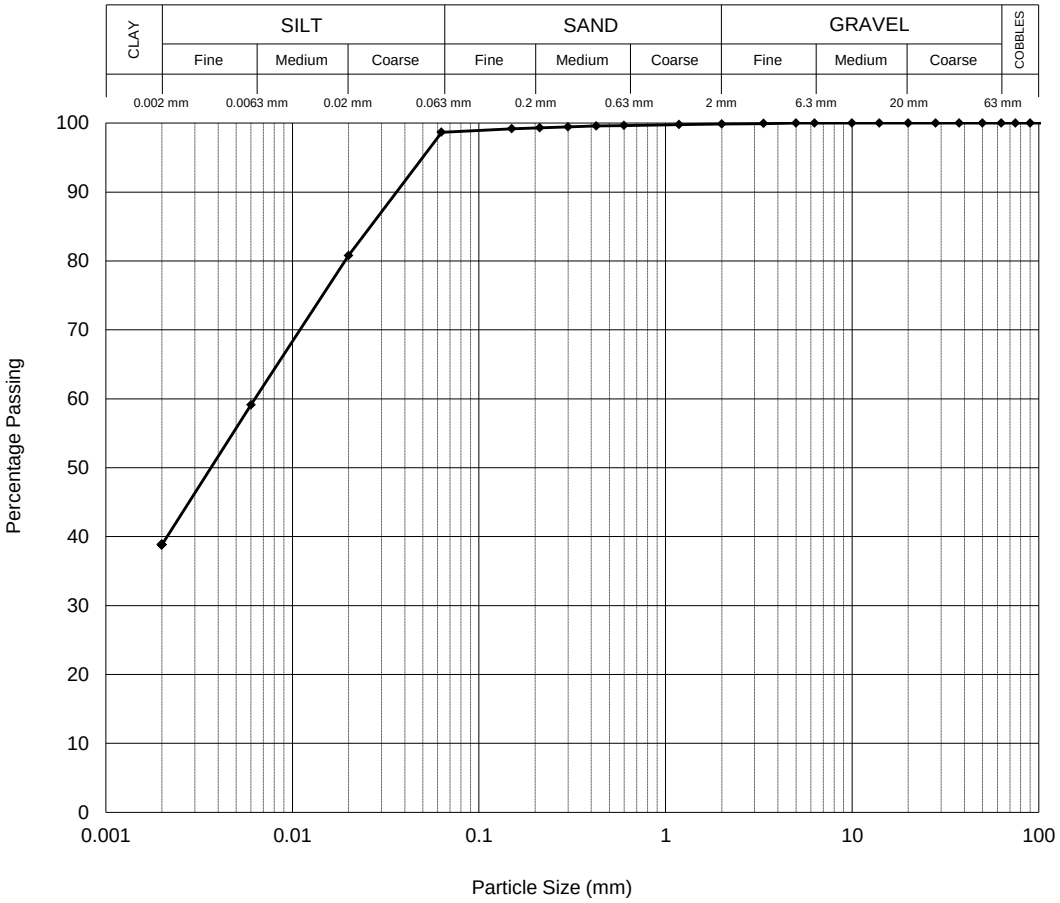
BH / TP No.	D4L2
Sample Ref	GT4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	59
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	60
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D2 L8	GT1	0.00		B	Dark grey slightly sandy CLAY			21.4	100	51	22	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
26/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
D2L8		GT2	B	Dark grey very clayey SILT.	2.63	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

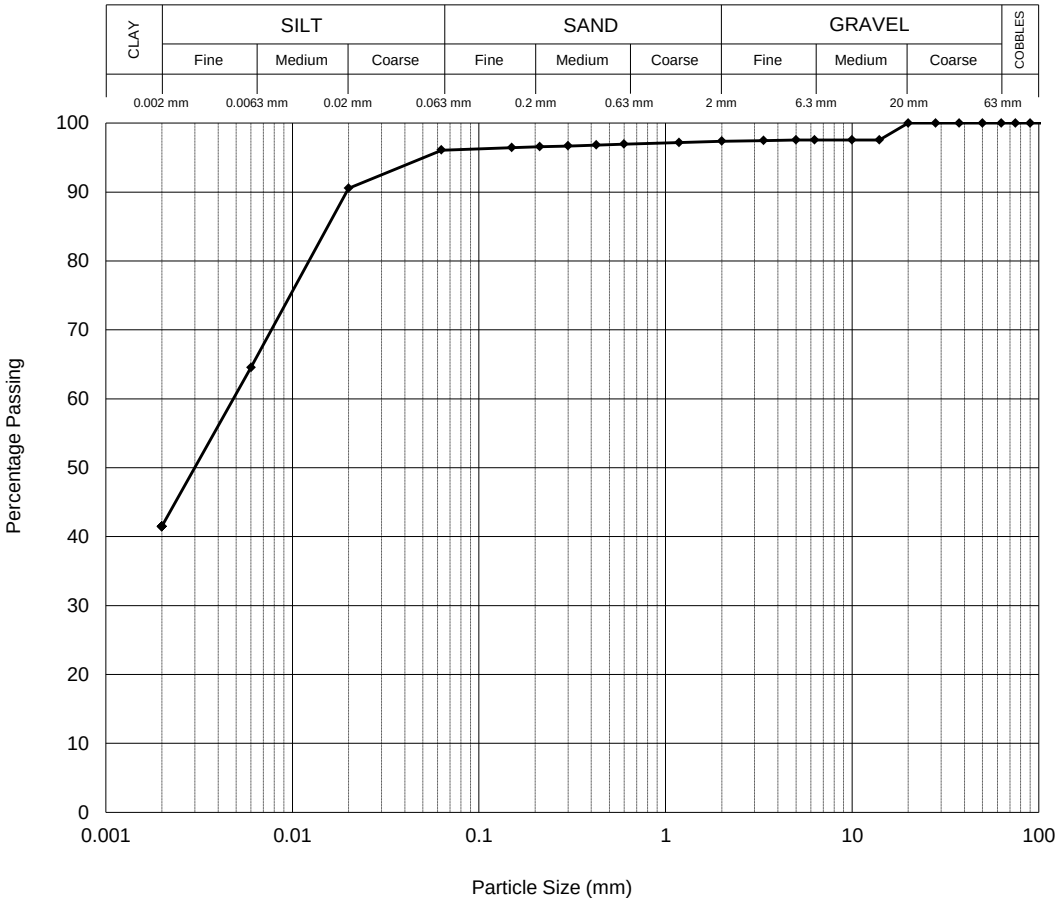
BH / TP No.	D2L8
Sample Ref	GT2
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	98
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	97
2.00 mm	97
1.18 mm	97
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	96
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	91
6 µm	65
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	3
Sand	1
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C3 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			20.7	100	50	22	28		
C4 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			21.2	100	49	22	27		
C5 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			20.9	100	50	21	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
28/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
C4L5		GT2	B	Dark grey CLAY and SILT.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28072

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

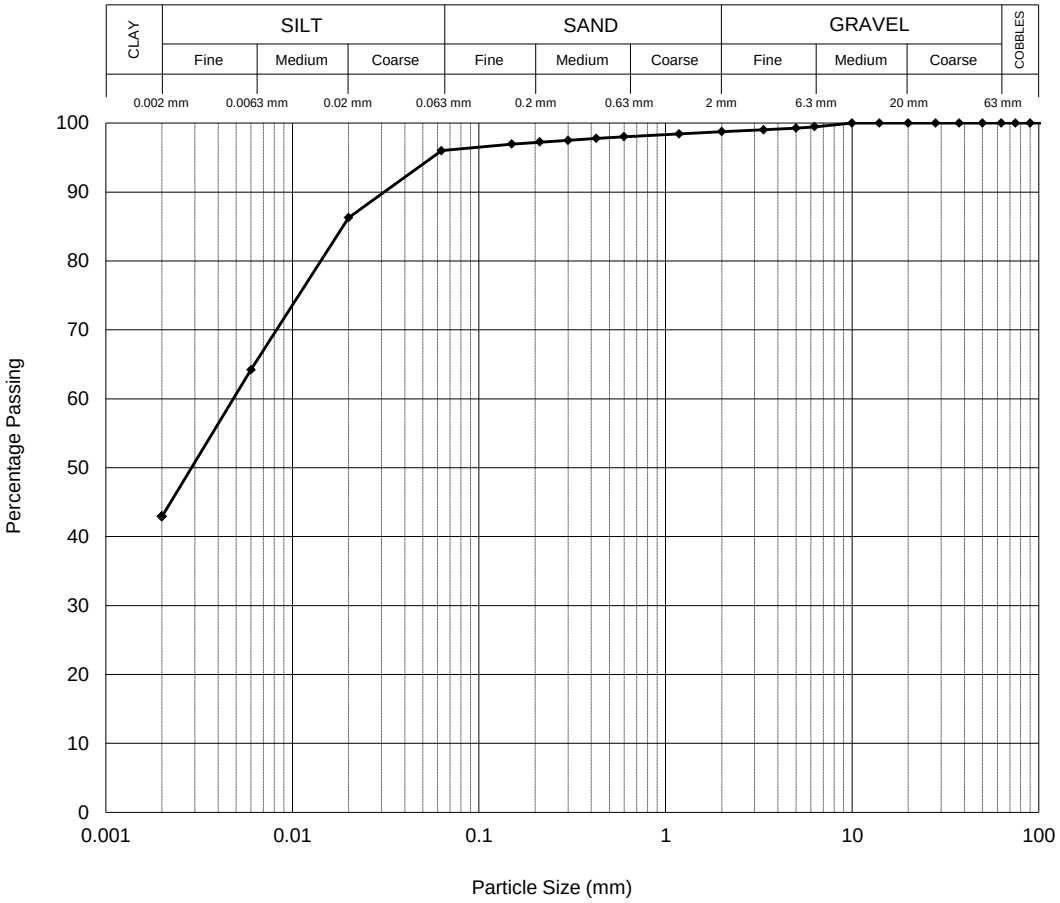
BH / TP No.	C4L5
Sample Ref	GT2
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	64
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	53
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28072

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13258

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	17	Sep-18
Date of receipt of testing instructions	17	Sep-18
Date testing started:	18	Sep-18
Date of issue:	11	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D3 L4	GT1	0.00		B	Dark grey slightly sandy CLAY			21.8	100	47	20	27		
D4 L4	GT3	0.00		B	Dark grey slightly sandy CLAY			22.0	100	48	21	27		
D5 L3	GT4	0.00		B	Dark grey slightly sandy CLAY			21.4	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
28/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
D3L4		GT2	B	Dark grey clayey SILT.	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
09/10/2018

Project Number:

GEO / 28073

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

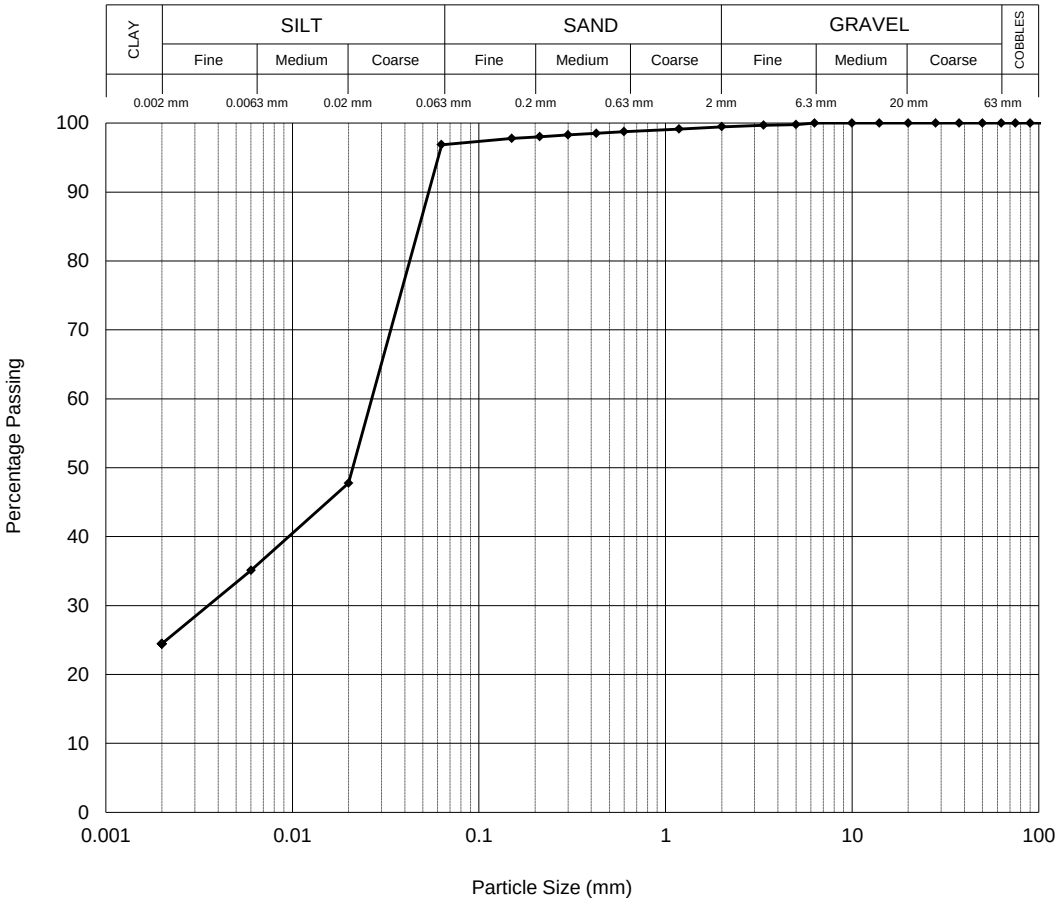
BH / TP No.	D3L4
Sample Ref	GT2
Sample Type	B

Description

Dark grey clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	48
6 µm	35
2 µm	24
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	72
Clay	24

Checked and Approved by

S Burke

S Burke - Senior Technician
09/10/2018

Project Number:

GEO / 28073

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			21.8	100	48	21	27		
B4 L5	GT5	0.00		B	Dark grey slightly sandy CLAY			21.8	100	48	21	27		
D3 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			22.6	100	48	22	26		
D4 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			22.3	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
10/11/2018 00:00	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D5 L5	GT1	0.00		B	Grey slightly gravelly slightly sandy CLAY			20.0	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
10/11/2018 00:00	Lisa Maiden	1
		sheet 1

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Appendix 7 – Photographs

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Monday 08 October 2018 from Grid B4



Tuesday 09 October 2018 Grid B2 Batter Layer B3 installed and rolled



Tuesday 09 October 2018 Grid B4 Batter Layer B3

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Wednesday 10 October 2018 from Grid B2 Batter formed and rolled



Wednesday 10 October 2018 from Grid B4 bund layer B4 installed



Thursday PM 11 October 2018 from Grid E5 bund work completed to layer 5 with a final layer to be installed

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Thursday am 11 Oct 2018 from Grid B4 Bund layer 5 installed and rolled, no testing for layer 4, 5 and 6 due to anticipated weather Friday.



Thursday PM 11 Oct 2018 from Grid B4 Bund layer 6 installed and compacted with batters sealed, no testing for layer 4, 5 and 6 due to anticipated weather Friday.

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Environmental Services

Title: Docksway Waste Disposal Site Cell 4 Containment

Construction Quality Assurance Report No 18 WE 21/10/18

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Project Ref: 2506
Date: 21-10-18

Document Control Sheet

Project Name: WDS Cell 4 Containment
Project Ref: 2506
Report Title: Construction Quality Assurance Weekly Report

	Name	Position	Signature	Date
Prepared by:	William Watt	CQA Inspector		24-10-18
Reviewed by:				
Approved by:				
Environmental Services				

Revision	Date	Description	Prepared	Reviewed	Approved

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4.3 MDD and OMC
4.4 LL, PL, PI, MC
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5.1 Core Cutter
5.2 Permeability

6.0 Problems encountered

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1. Progression Plan
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3. Permeability Tests
4. Moisture content/dry density for Compaction
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7. Liquid Limits, Moisture Contents, Plastic Limits, Plasticity Index.
8. Photographs

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1.0 Introduction

This weekly report is a consolidation of the CQA observations for the period of the title. It provides an oversite for the CQA Project Manager of the key observations tests, results and progress as observed by the CQA inspector. Its content is based on that prescribed within the CQA plan.

2.0 Weather

Heavy rain over the weekend and rain on Monday and Tuesday prevents clay installation. Wednesday, Thursday, Friday Fine. The weather Monday and Tuesday 22 and 23 October was fine.

3.0 Progress for the week

3.1 Stockpile

Clay material is stopped delivery Friday 12 October 2018.

Up to the 12 October 2018, 54,123.4 tonnes of material was delivered to site. The working hours this week were 730am to 1600pm.

3.2 Work Progress

Work was undertaken to the batter gird B2 to B5. Rework and repeat testing was undertaken on the batter following non-compliant moisture test results for layer 5.

The material was installed in accordance with the construction specification and tested in accordance with the CQA plan as per the testing log for areas of 125m^2.

Leachate from the existing D1 to B1 cell was captured within a grip and pumped for disposal.

Testing by CJ Associates was undertaken Friday 19 October 2018 and Tuesday 23 October.

Plant on site One 10-ton front loader, 1 excavators, roller and bowser. (1 front loader removed from site 15 October 2018).

3.3a Additional Layers
No work undertaken

3.3b Levelling the Area
No work undertaken

3.3 Layer 1
No work undertaken

3.4 Layer 2
No work undertaken

3.5 Layer 3
No work undertaken

3.6 Layer 4

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B2, B3, B4, B5

3.7 Layer 5

B2, B3, B4, B5

3.8 Layer +6

No work undertaken

4.0 Testing

Testing was conducted in accordance with the CQA Plan section 4. The testing locations are conducted at pre-determined and arbitrary locations. The scheme for testing comprises:

- 1 core (plus one spare sample for retesting) per 25 metre grid square per layer of clay for dry density/moisture content relationship test and insitu density.
- 3 Hand Shear Vane testing per 25 metre grid square per layer of clay,
- 1 bulk sample per 25 metre grid square per layer of clay for moister content and atterberg limit,
- 1 bulk sample per two 25meter grid square per layer of clay for particle density and size distribution; and
- 1 core (plus one spare sample for retesting) every 10, 25 metre grid square per layer of clay for permeability.

4.1 Core Cutter Samples

4 core cutter samples plus a spare at each location were taken this week. Initialling the spare core were tested, then following the 21 June 2018 only the main cores were tested and the spares are to be retained and retested if required.
4 results with no spare core tests received as per the Appendix 1 and 2.
Cores are gathered and tested by the CJ associates and tested.

No spare cores were tested.

4.2 Permeability Samples

No samples or spares were taken this week.
Results have been received and are shown in the appendices.

4.3 MC and PI,

Details received for PI and PL and included within the appendix and recorded within Appendix 1.

4.4 Particle Distribution and Particle Density

Details received all within tolerance and included within the appendix and recorded within Appendix 1

4.5 Hand Shear Vane

Hand Shear Vane results continued at a rate of 3 per Cell. They predominantly remained above 100Kn/m^2, with a minimum reading was 105 KN/ m^2 recorded.

5.0 Results Summary

Two Core test results this week were outside the tolerance for the moisture content, the area was treated and achieved a compliant retested for compaction and moisture content.

6.0 Problems Encountered

Moisture content for sample bag material taken in Week 17 were outside tolerance. However, the cores for this material were within tolerance see appendix 1 bunds test results.
The bags were stored in the site office for a day before being taken for testing and 'sweated' in the bags. It is suggested that there was a problem with the sample bag storage and testing.

2 Cores tested this week were outside the tolerance for moisture content, the area was treated and re-tested.

RAMS issued Wednesday 15 August 2018 for working adjacent to the existing cutting at grid B1 to D1 action:

- CQA Inspector to monitor cutting face for movement and leachate flow and top of cutting for tension cracks daily- photos recorded no issues identified.
- Council to manage the pumping of leachate from the manhole adjacent to grid A1 a minimum of weekly- ongoing Leachate pumped.
- Council to prevent vehicles from tracking the top of the cutting slope- A rubble bund was installed blocking the access was removed 14 August 2018.
- Pedestrian and vehicle movements within 15m of the cut face was minimised – The work along grid B1 to D1 is completed 22 August 2018.

The Council's contractor attended site 15 and 17 October 2018 pump leachate out the adjacent cell. Some weathering of the cut face surface has been noted.

The works are now substantially complete with snagging works required for completion:

- bund tie-in at grid G5
- filling of the leachate ditch from grid F1 to B1
- forming the ditch at the top of batter grid B2 to B5

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Appendix 1 - Progression Plan

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Core Cutter

Grid Ref	-L1		-L2				-L3		-L4		-L5		-L6				-L7		-L8		-L9 + L-9A		-L10 + L-10A		-L11	
	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																										
Date																										
A2																										
Date																										
A3																										
Date																										
B1	MC&PI/ D&MC	P- Sh-104	MC&PI	N/A B1L-1			MC&PI/D &MC	N/A B1L-3	N/A B1L-5	N/A B1L-5	MC&PI/D&MC	P Sh-105	D&MC	P Sh- 60												
Date	27/07/18	P 30/07/18 P-PI 15/08/18	27/07/18	P-PI 15/08/18			27/07/18				31/07/18	P 01/08/18	01/08/18	P 02/08/18												
B1A	N/A B1L-2A	N/A B1L-2A	MC&PI/D S&D/D&M C	P S-108			N/A B1L-4A	N/A B1L-4A	N/A B1L-6	N/A B1L-6	D&MC	P S-120														
Date	31/06/18			P 01/08/18 P-PI 15/08/18			31/06/18		01/08/18	P 02/08/18	02/08/18	P 03/08/18														
B3																										
Date																										
C1																										
Date																										
C2	N/A	N/A (D2-1)																								
Date	18/06/18																									
C3	N/A	P (C4L-1)	N/A (C4L-2)		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-6)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)						
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18						
C4	MC&PI/ **D&S**/D&MC	P- Sh-101	MC&PI/ D&MC And S	F >5% voids Sh-max	D&MC And S	P Sh-101	MC&PI/**D &S**/ D&MC And S	P Sh-max	MC&PI/**D &S**/ D&MC And S	P Sh-122	MC&PI / D&MC And S	Sh-max	MC&PI / D&MC And S	Sh-max	D&MC And S	P Sh-130	MC&PI /DS&D/ D&MC And S	Sh-94	MC&PI /DS&D/ D&MC And S	P S- 86						
Date	20/06/18	P P-PI 20/07/18 P-DS 20/07/18	22/06/18	F 25/06/18	25/06/18	P 26/06/18 P-PI 20/07/18	26/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P 01/07/18 P-PI 08/08/18	02/07/18	P 04/07/18 F- PI Moisture 08/08/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18 P-PI 08/08/18	06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18	09/07/18	P 10/07/18 P-PI 08/08/18 P-DS 13/08/18						
C5	D&MC	P- Sh- 84	D&MC	N/A C5L1			D&MC	N/A C5L4A	D&MC	P Sh- 58																
Date	T 19/07/18	P 20/07/18	T 19/07/18	P C5L1			T 20/07/18	N/A C5L4A	T 19/07/18	P 23/07/18																
D1																										
Date																										
D2	N/A	N/A (C2L-1)																								
Date	18/06/18																									
D3																										
Date																										
D4	N/A	P (C4L-1)	N/A		(C4L-2)	P (C4L-2)	N/A (C4L-3)	N/A (C4L-3)	N/A (C4L-4)	N/A (C4L-4)	N/A (C4L-5)	N/A (C4L-5)	N/A (C4L-6)	N/A (C4L-6)	(C4L-6)	P (C4L-2)	N/A (C4L-7)	N/A (C4L-7)	N/A (C4L-8)	N/A (C4L-8)	MC&PI /DS&D/ D&MC And S	P S- 94	MC&PI /DS&D/ D&MC And S	P S- 70	MC&PI / D&MC And S	P S-120
Date	20/06/18		22/06/18	F 25/06/18			26/06/18	P- 28/06/18	28//06/18	P 01/07/18	02/07/18	P 04/07/18	04/07/18	F- Moisture 05/07/18	05/07/18	P 06/07/18	06/07/18	P 09/07/18	09/07/18	P 10/07/18	10/07/18	P 11/07/18 P-PI 08/08/18 P-DS&D 06/09/18	11/07/18	P 12/07/18 P-PI 08/08/18 P-DS&D 13/08/18	12/07/18	P 16/07/18 P-PI 08/08/18
D5																										
Date																										

Grid Ref	L1		L2A		L2B		L2				L3		L4				L5		L5A		L6		L7		L8		L9		L10	
	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Rework and Retest	Rework and Retest	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result	Orig	Result
A1																														

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Date																													
A2																													
Date																													
A3																													
Date																													
B1	MC&PI/D S&D/ D&MC	P Sh-125 P-PI 03/09/18 P- DS&D 19/09/18	MC&PI/DS& D/D&MC	P Sh-108	N/A B1L2	N/A B1L2	MC&PI/ D&MC	P Sh-150			MC&PI/ D&MC	P-Sh-90	N/A	N/A			MC&PI/ D&MC	S-150											
Date	T- 13/06/18	P 15/08/18	T- 14/06/18	P 15/08/18 P-PI 03/09/18 P-DS&D 31/08/18	T- 16/06/18	N/A B1L2	T- 16/06/18	P 20/08/18 P-PI 03/09/18 P-DS&D 19/09/18			T- 04/09/18	P- 06/09/18 P-PI 15/09/18	T- 28/09/18	N/A			T- 28/09/18	P- 03-10-18 P-PI 18/10/18											
B2	MC&PI/D &MC	P Sh-max					MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/ D&MC And S	P Sh-max	MC&PI/**D&S**/ D&MC And S	Sh-max	D&MC And S	Sh-Max	MC&PI/ D&MC And S	Sh-120			MC&PI/ D&MC And S	Sh-100	MC&PI/ D&MC And S	P Sh-96	MC&PI/ DS&D/D&MC And S	P Sh-115	MC&PI/ DS&D/D&MC And S	P Sh-122	MC&PI/D &MC And S	P-Sh-125
Date	T- 19/06/18	P 20/06/18 P-PI 19/07/18					T-20/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	F 27/06/18	27/06/18	P- 28/06/18 P-PI 20/07/18 P-DS&D 20/07/18	28/06/18	P 29/06/18 P-PI 18/07/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18	T 02/08/18	P- 03/08/18 P-PI 03/09/18	T 23/08/18	P 24/08/18 P-PI 15/09/18 P-DS&D 11/10/18	T 24/08/18	P 28/08/18 P-PI 15/09/18 P-DS 01/10/18	T 04/09/18	P- 06/09/18 P-PI 15/09/18
B3	MC&PI/D S&D/D&MC	P Sh-70					MC&PI/D S&D/D&MC	P Sh-105			MC&PI/D S&D/D&MC	P Sh-94	MC&PI/D S&D/D&MC	P Sh-95			MC&PI/D S&D/D&MC	P Sh-105											
Date	T- 19/06/18	P 20/07/18 F-PI Moistur 08/08/18 P- DS 24/08/18					T- 02/08/18	P 03/08/18 P-PI 03/08/18 P-DS&D 03/09/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T- 12/09/18	P 13/09/18 P-PI 01/10/18			T- 19/09/18	P 20/09/18 P-PI 11/10/18											
B4	MC&PI/D &MC	P Sh-86					D&MC	P S-100			MC&PI/D S&D/D&MC	P Sh-75	MC&PI /D&MC	P Sh-140			MC&PI/ DS&D/D&MC	P Sh-150											
Date	T- 19/06/18	P 20/07/18 P-PI 08/08/18					T-02/08/18	P 03/08/18			T- 22/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T- 12/09/18	P 13/09/18 P-PI 01/10/18 P-DS&D 03/10/18			T- 19/09/18	P 20/09/18 P-PI 11/10/18											
B5	MC&PI	N/A B4L1					N/A B3L2	N/A B3L2	N/A C5L4	N/A C5L4	N/A B4L3	N/A B4L3	N/A B4L4	N/A B4L4															
Date	T- 19/06/18	N/A B4L1 P-PI 08/08/18					N/A B3L2	N/A B3L2	N/A 23/08/18	N/A 24/08/18	N/A B4L3	N/A B4L3	N/A B4L4 12/09/18	N/A B4L4 13/09/18															
C1	MC&PI/ **D&S**/D &MC	P Sh-125	MC&PI/ D&MC and S	P Sh-120			MC&PI/ **D&S**/ D&MC And S	P Sh-max			MC&PI/D& MC And S	P Sh-max	MC&PI/D& MC And S	Sh-106			MC&PI/ D&MC	P Sh-max	N/A D1L6	N/A D1L6	MC&PI/ D&MC	P Sh-89	MC&PI/ DS&D/D &MC	P Sh-125					
Date	T- 20/06/18	F	21/06/18	22/06/18 P PI 20/07/18 P- DS &D 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18 P-DS&D 20/07/18			26/06/18	P 27/06/18 P-PI 19/07/18	26/06/18	P 29/06/18 P-PI 18/07/18			T- 29/06/18	P 03/07/18 P-PI 08/08/18	T-14/08/18	P 16/08/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18 P-DS 11/10/18					
C2	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/**D&S**/ /D&MC And S	P Sh-max			MC&PI/**D&S**/ /D&MC And S	P Sh-max	MC&PI/ D&MC And S	Sh -122			MC&PI/**D&S**/ D&MC And S	Sh-106			MC&PI/ **DS&D/** D&MC And S	Sh-80	MC&PI/ **DS&D/** D&MC And S	Sh-145	MC&P I/D& MC	P-116	MC&PI/ DS&D/D&MC And S	P-Sh-150		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18					21/06/18	22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	26/06/18	P- 28/06/18 P-PI 18/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18 P-DS 11/10/18	T- 28/07/18	P- 29/0818 P-PI 15/09/18	T 04/09/18	P- 06/09/18 P-PI 15/09/18 P-DS 01/10/18		
C3	MC&PI/ **D&S**/D &MC	P Sh- 128					MC&PI/ **D&S**/D &MC	P Sh- 80			MC&PI/ **D&S**/D &MC	P Sh- 150	MC&PI/ **D&S**/D &MC	P Sh- 88			MC&PI/ D&MC	P Sh- 122											
Date	T- 19/06/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18					T- 02/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18 P-DS 01/10/18	T- 30/08/18	P 03/09/18 P-PI 15/09/18 P-DS 11/10/18			T- 13/09/18	P 17/09/18 P-PI 01/10/18											
C4	MC&PI/D S&D/D&MC	Sh- 115					MC&PI/D S&D/D&MC	P Sh- 124			MC&PI/ D&MC	P Sh- 100	MC&PI/ D&MC And S	P Sh-150			MC&PI/ DS&D/D &MC	P Sh- 128											
Date	T- 18/07/18	P 20/07/18 P-PI 08/08/18 P-DS&D 14/08/18					T- 02/08/18	P 03/08/18 P-PI 03/09/18 P-DS&D 03/09/18			T- 21/08/18	P 23/08/18 P-PI 15/09/18	T 23/08/18	P 28/08/18 P-PI 15/09/18			T- 13/09/18	P 17/09/18 P-PI 01/10/18 P-DS&D 11/10/18											
C5	MC&PI/D &MC	Sh-108					N/A C4L2	N/A C4L2			MC&PI/ D&MC	P Sh- 110	MC&PI/ D&MC And S	P Sh-100			MC&PI/ D&MC	P Sh- 95											
Date	T- 18/07/18	P 20/07/18 P-PI					N/A C4L2	N/A C4L2			T- 21/08/18	P 23/08/18 P-PI	T 23/08/18	P 24/08/18 P-PI			T- 13/09/18	P 17/09/18 P-PI											

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		08/08/18										15/09/18		15/09/18				01/10/18												
D1	MC&PI/D&MC	Sh-max	N/A	P (C1L2A)			MC&PI/ D&MC And S	P Sh-max			MC&PI/**D&S**/D&MC And S	P Sh-max	MC&PI/**D&DS** / D&MC And S	Sh-112			MC&PI/ **D&S**/D &MC	P Sh-max	MC&PI/D S&D/D& MC	P Sh-108	MC&PI/ D&MC	P Sh-104	MC&PI/ DS&D/D &MC	P Sh-125						
Date	T- 19/06/18	F P- PI 19/07/18	21/06/18	P 22/06/18 P- PI 20/07/18			22/06/18	P 25/06/18 P-PI 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18 P-DS&D 20/07/18	27/06/18	P 29/06/18 P-PI 18/07/18 P- DS&D 23/07/18			T- 29/06/18	P- 01/07/18 P-PI 08/08/18 P-DS&D 06/09/18	T-14/08/18	P 16/08/18 P-PI 03/09/18	T- 15/08/18	P 16/08/18 P-PI 03/09/18	T- 17/08/18	P 20/08/18 P-PI 03/09/18 P-DS 11/10/18						
D2	MC&PI/ **D&S**/D &MC	P Sh-120					MC&PI/**D&S**/D&MC And S	P Sh-max			MC&PI/ D&MC And S	P Sh-max	MC&PI/**D&DS**/ D&MC And S	P Sh-122			MC&PI/**D&DS**/ D&MC And S	Sh-108			MC&PI/ **DS&D/** D&MC And S	Sh-90	MC&PI/ **DS&D/** D&MC And S	Sh-122	MC&PI/ **DS&D/** D&MC And S	Sh-78	MC&PI/ **DS&D/** D&MC And S	Sh-121		
Date	T- 19/06/18	P- 20/06/18 P-PI 19/07/18 P-DS&D 19/07/18					21/06/18	P 22/06/18 P-PI 20/07/18 P-DS&D 20/07/18			25/06/18	P 26/06/18 P-PI 20/07/18	27/06/18	P- 28/06/18 P-PI 18/07/18 P- DS&D 23/07/18			28/06/18	P 29/06/18 P-PI 18/07/18 P-DS&D 20/08/18			T 02/07/18	P 03/07/18 P-Pi 08/08/18 P-DS&D 08/08/18	T 20/08/18	P 21/07/18 P-PI 03/09/18 P-DS 11/10/18	T 06/09/ 18	P 07/09/18 P-PI 26/09/18 P-DS 11/10/18	T 10/09/18	P 13/09/18 P-PI 01/10/18 P-DS&D 03/10/18		
D3	MC&PI/ **D&S**/D &MC/**P**	P Sh- 58					MC&PI/ **D&S**/D &MC	P Sh- 106			MC&PI/ **D&S**/D &MC	P Sh- 64	MC&PI/ **D&S**/D &MC	P Sh- 150			MC&PI/ D&MC	P Sh- 118													
Date	T- 20/06/18	P 23/07/18 P-PI 08/08/18 P-DS 23/08/18					T- 03/09/18	P 04/09/18 P-PI 15/09/18 P-DS 01/10/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18 P-DS&D 03/10/18	T- 14/09/18	P-18/09/18 P-PI 01/10/18 P-DS&D 11/10/18			T- 19/09/18	P-20/09/18 P-PI 11/10/18													
D4	MC&PI/ D&MC	P Sh-120		P sh- 95			MC&PI/**D&S**/D&MC And S	P Sh-70			MC&PI/ D&MC	P Sh- 80	MC&PI/ D&MC	P Sh- 150			MC&PI/ D&MC	P Sh- 104													
Date	T- 16/07/18	F- moisture & Voids P-PI 08/08/18	P 19/07/18	P 20/07/18			T- 31/08/18	P- 04/09/18 P-PI 15/09/18 P-DS 11/10/18			T- 07/09/18	P 10/09/18 P-Pi 26/09/18	T- 17/09/18	P-18/09/18 P-PI 01/10/18			T- 19/09/18	P-20/09/18 P-PI 11/10/18													
D5	MC&PI	N/A D4L1	N/A D4L1	N/A D4L1			MC&PI/ D&MC	P-142			MC&PI/ D&MC	P Sh- 150	N/A D4/L5	N/A D4/L5			MC&PI/ DS&D/ D&MC	P Sh- 80													
Date	T- 16/07/18	F P-PI 08/0818	19/07/18	20/07/18			T- 28/07/18	P- 29/0818 P-PI 15/09/18			T- 17/09/18	P-18/09/18 P-PI 01/10/18	N/A D4/L5	N/A D4/L5			T- 26/09/18	P-27/09/18 P-PI 11/10/18													
E1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-130max		P Sh- 58min	MC&PI/ D&MC	P Sh-94	MC&PI/ D&MC	P Sh-98			MC&PI/ D&MC	N/A E2L5			MC&PI/ D&MC	P Sh-90	MC&PI/ DS&D/ D&MC	P Sh-132						
Date	T- 29/06/18	P- 01/07/18 P-PI 08/08/18					T- 03/07/18	F- Moisture 05/07/18 F- PI moisture 08/08/18		P 09/07/18	T- 10/07/18	P 12/07/18 F-PI Moisture 08/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18	T- 14/08/18	P 16/08/18 P-PI 03/09/18 P-DS&D 19/09/18						
E2	MC&PI/ D&MC	P Sh-130 max					MC&PI/ D&MC	P S-130 Max			MC&PI/ **DS&D**/D &MC	Sh-112	MC&PI/ D&MC	P Sh-134			MC&PI/ DS&D/D &MC	P Sh-88			MC&PI/ D&MC	P Sh-110								
Date	T- 03/07/18	P 05/07/18 P-PI 08/08/18					T- 06/07/18	P 10/07/18 P-PI 08/08/18			T- 17/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18			T- 27/07/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E3	MC&PI/ D&MC	P S68					MC&PI/ DS&D/D &MC	P S-130 max			MC&PI/ D&MC	Sh-150	MC&PI/ **DS&D**/D &MC	P Sh-135			MC&PI/ DS&D/D &MC	P Sh-75			MC&PI/ D&MC	P Sh-78								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 11/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 13/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18								
E4	MC&PI/ D&MC	P S104					MC&PI/ DS&D/D &MC	P S-74			MC&PI/ D&MC	Sh-130	MC&PI/ D&MC	P Sh-102			MC&PI /D&MC	P Sh-95			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18	T- 24/07/18	P 26/07/18 P-PI 08/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P- DS&D 06/09/18								
E5	MC&PI/ D&MC	P S108					MC&PI/ DS&D/D &MC	P S-110			MC&PI/ **DS&D**/D &MC	P Sh-98	MC&PI/ DS&D// D&MC	P Sh-118			MC&PI/ DS&D/D &MC	P Sh-92			MC&PI/ DS&D/D &MC	P Sh-120								
Date	T- 09/07/18	P 11/07/18 P-PI 08/08/18					T- 12/07/18	P- 13/07/18 P-PI 08/08/18			T- 18/07/18	P 19/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 25/07/18	P 26/07/18 P-PI 08/08/18 P-DS&D 31/08/18			T- 01/08/18	P 02/08/18 P-PI 15/08/18 P-DS&D 31/08/18			T- 09/08/18	P-10/08/18 P-PI 03/09/18 P-DS&D 06/09/18								
F1	MC&PI/ **D&S**/D &MC	P Sh-max					MC&PI/ **DS&S**/D &MC	P Sh-124			MC&PI/ **D&S**/D &MC	P Sh-98	N/A F2/L4	N/A F2/L4			MC&PI/ D&MC	P Sh-142			N/A F2/L6	N/A F2/L6								
Date	T- 29/06/18	P- 01/07/18 P – PI 08/08/18 P-DS&D					T- 03/07/18	P 05/07/18 F-PI Moisture 08/08/18			T- 10/07/18	P 11/07/18 P-PI 08/08/18	N/A F2/L4	N/A F2/L4			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	N/A F2/L6								

Streetscene
Y-Strydynun

Civic Centre/Canolfan Ddinesig
Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL CYNGOR DINAS Casnewydd

		06/09/18						P- DS&DS 31/08/18				P-DS&D 06/09/18																	
F2	MC&PI/ **D&S**/D &MC	P Sh-					MC&PI/ D&MC	P Sh-72			MC&PI/ **DS&D**/ D&MC	P Sh-100	MC&PI/ D&MC	P Sh-80			MC&PI/ D&MC	P Sh-130			MC&PI/ DS&D/ D&MC	P Sh-78							
Date	T- 03/07/18	P- 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 14/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18			T- 26/07/18	P 27/07/18 P-PI 15/08/18			T- 06/08/18	P 07/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F3	MC&PI/ **D&S**/D &MC	P Sh-130 max					MC&PI/ **DS&D**/D &MC	P Sh-98			MC&PI/ D&MC	P Sh-92	MC&PI/ D&MC	P Sh-106	P Sh112		MC&PI/ DS&D/D &MC	P Sh-118			MC&PI/ DS&D/ D&MC	P Sh-78							
Date	T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 31/08/18					T- 05/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 13/07/18	P 17/07/18 P-PI 08/08/18	T- 20/07/18	F Moisture>26 24/07/18 P-PI 08/08/18	P 25/07/18		T- 26/07/18	P 30/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 06/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F4	MC&PI/ D&MC	P Sh-130 Max					MC&PI/ DS&D/D &MC	P Sh-130 Max			MC&PI/ D&MC	P Sh-55	MC&PI/ **DS&D**/ D&MC	P Sh-80			MC&PI/ DS&D/D &MC	P Sh-67			MC&PI/ DS&D/ D&MC	P Sh-122							
Date	T- 04/07/18	P 05/07/18 F- PI Moisture 08/08/18					T- 06/07/18	P 09/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 16/07/18	P 17/07/18 P-PI 08/08/18 P-DS&D 20/08/18	T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 27/07/18	P 30/07/18 P-PI 15/08/18 P-DS 24/08/18			T- 08/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18							
F5	MC&PI/ D&MC	P Sh-130					MC&PI/ DS&D/D &MC	Sh- 150 max			MC&PI/ **DS&D**/ D&MC	P Sh-142	MC&PI/ D&MC	P Sh-65			N/A F4/L6	N/A F4/L6			N/A F4/L6	N/A F4/L6							
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18					T- 16/07/18	P 18/07/18 P-PI 08/08/18 P-DS&D 20/08/18			T- 24/07/18	P 25/07/18 P-PI 08/08/18 P-DS 24/08/18	T- 27/07/18	P 30/07/18 P-PI 15/08/18			T- 08/08/18	P 09/08/18			T- 08/08/18	P 09/08/18							
G1	MC&PI/ D&MC	P Sh-max					MC&PI/ D&MC	P Sh-94min			N/A (F1L3)	N/A (F1L3	N/A (G2L4)	N/A (G2L4)			MC&PI	N/A G2L5			N/A G2L6	N/A G2L6							
Date	T- 29/06/18	P- 01/07/18 P- PI 08/08/18					T- 03/07/18	P 05/07/18 P-PI 08/08/18			10/07/18	P 11/07/18	20/07/18	N/A (G2L4)			T- 25/07/18	P-PI 08/08/18			06/08/18	N/A G2L6							
G2	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-124			MC&PI/ D&MC	P Sh-105	MC&PI/ DS&D/D &MC	P Sh-100			MC&PI/ DS&D/D &MC	P Sh-122			MC&PI/ /D&MC	P Sh- 135							
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 10/07/18	P 12/07/18 P-PI 08/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18							
G3	MC&PI/ D&MC	Sh-					MC&PI/ D&MC	P Sh-114			MC&PI/ DS&D/D &MC	P Sh-130 max	MC&PI /D&MC	P Sh-68			MC&PI/ D&MC	P Sh-114			MC&PI/ D&MC	P Sh- 125							
Date	T- 02/07/18	P 04/07/18 P-PI 08/08/18					T- 04/07/18	P 05/07/18 P-PI 08/08/18			T- 11/07/18	P 12/07/18 P-PI 08/08/18 P- DS&D 13/08/18	T- 20/07/18	P 23/07/18 P-PI 08/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18			T- 03/08/18	P 07/08/18 P-PI 03/09/18							
G4	MC&PI/ **D&DS**/D &MC	Sh-					MC&PI/ D&MC	P Sh-120			MC&PI/ D&MC	P Sh-80	MC&PI/ DS&D/D &MC	P Sh-150			MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-110	MC&PI/ DS&D/D &MC	P Sh-90					
Date	T- 03/07/18	P 04/07/18 P-PI 08/08/18 P-DS&D 08/08/18					T- 05/07/18	P 05/07/18 P-PI 08/08/18 P-DS&D 06/09/18			T- 12/07/18	P 16/07/18 P-PI 08/08/18	T- 20/07/18	P 24/07/18 P-PI 08/08/18 P-DS 24/08/18			T- 25/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18 P-DS&D 13/09/18	T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 06/09/18					
G5	MC&PI/ **D&DS**/D &MC	P Sh-95					MC&PI/ D&MC	P Sh-72			MC&PI/ D&MC	P Sh-78	MC&PI/ DS&D/D &MC	P Sh-98			MC&PI/ DS&D/D &MC	P Sh-102			N/A G4L7	N/A G4L7							
Date	T- 09/07/18	P 10/07/18 P-PI 08/08/18 P-DS&D 13/08/18					T- 13/07/18	P 16/07/18 P-PI 08/08/18			T- 20/07/18	P 24/07/18 P-PI 08/08/18	T- 26/07/18	P 27/07/18 P-PI 15/08/18 P-DS&D 06/09/18			T- 03/08/18	P 06/08/18 P-PI 03/09/18			T- 07/08/18	P 09/08/18 P-PI 03/09/18 P-DS&D 13/09/18							

P- Pass
F- Fail

MC&PI-	Water content & Atterberg 1/250m3	(1 per Cells/layer)	1/4 bag at deposit
D&S -	Particle Density & Particle Distribution 1/500m3	(1 per 2 Cells/layer)	1/2 bag at deposit
Sh-	Shear vane	(3 per Cells/layer)	Record
D&MC -	Dry density & Moisture content 1/250m3	(1 per Cells/layer)	Core (2No 1 spare)
P -	Permeability triaxial cell – 1/2000m3	(1 per 10 Cells/layer)	Core (2No 1 spare)

Streetscene
Y-Strydynun

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South Wales/De Cymru
NP20 4UR

Newport CITY COUNCIL
CYNGOR DINAS
Casnewydd

Permeability

Grid Ref	Result – K_y at 20°C	Date Sampled	Comments	Date Testing complete
C2-L1	$1.4x10^{-10}$m/s $9.6x10^{-11}$m/s	19/06/18 & Spare 20/06/18	Miss Named C1L1 & B2L1	P 20/07/18
B2-L3	$9.7x10^{-11}$m/s	22/06/18		P 31/08/18
D2-L4	$6.8x10^{-10}$m/s	27/06/18		P 31/08/18
F3-L1	$1.6x10^{-10}$m/s	04/07/18		P 31/08/18
F4-L2	$1.1x10^{-10}$m/s	05/07/18	Miss named E4L2	P 19/09/18
D4L-9	$1.1x10^{-10}$m/s	10/07/18		P 06/09/18
E5-L2	$3.0x10^{-11}$m/s	12/07/18		P 19/09/18
E3-L3	$1.2x10^{-10}$m/s	18/07/18		P 31/08/18
D3-L1	$6.1x10^{-11}$m/s	20/07/18		P 25/09/18
E2-L4	$9.0x10^{-11}$m/s	24/07/18		P 25/09/18
F2-L5	$4.2x10^{-10}$m/s	26/07/18		P 19/09/18
E3-L5	$4.4x10^{-11}$m/s	01/08/18		P 11/10/18
G2-L6	$1.6x10^{-10}$m/s	06/08/18		P 11/10/18
C1-L7	$7.6x10^{-11}$m/s	17/08/18		P 18/10/18
C2-L7	$1.9x10^{-11}$m/s	20/08/18		P 18/10/18
D2L8	$1.1x10^{-10}$m/s	06/09/18		P 15/10/18
C3L5	$7.8x10^{-11}$m/s	13/09/18	Miss named C3L4	P 15/10/18

Bund

Layer	Ref	Date	Pass/Fail
A1L1	D&MC	02/10/18	P – S125 03/10/18
B3B1	MC&PI/DS&D/D&MC	04/10/18	P-S150 08/10/18 P-PI 18/10/18
G5B1	MC&PI /D&MC	02/10/18	P-S150 08/10/18 P-PI 18/10/18
E5B2	MC&PI /D&MC	03/10/18	P-S150 08/10/18 F-PI 18/10/18
C5B2	MC&PI/DS&D/D&MC	04/10/18	P-S150 08/10/18 F-PI 18/10/18
E5B3	MC&PI/DS&D/D&MC	10/10/18	P-S150 11/10/18 F-PI 18/10/18
B3B3	MC&PI/D&MC	10/10/18	P-S150 11/10/18 F-PI 18/10/18
E5B4, E5B5 &E5B6	N/A – see tests for E5B3- weather required work to progress	11/10/18	N/A
B2B5	D&MC Treat & Re-test D&MC	19/10/18 23/10/18	F (moisture) -S110 22/10/18 P-S110 24/10/18
B4B5	D&MC Treat & Re-test D&MC	19/10/18 23/10/18	F (moisture) -S115 22/10/18 P-S105 24/10/18

Streetscene
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Newport/Casnewydd
South Wales/De Cymru
NP20 4UR

Newport
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Casnewydd

Appendix 2 - Test Results - Permeability Tests

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	Core
Sample Ref.:	C1L7
Sample Type:	C

Description:
Stiff dark grey CLAY withmuch weakly cemented mudstone gravel up to 8mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	97.91	97.27
Height	*mm*	100.09	99.43
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.03	2.13
Dry Density	*Mg/m³*	1.67	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.51	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	14.8

PERMEABILITY STAGE

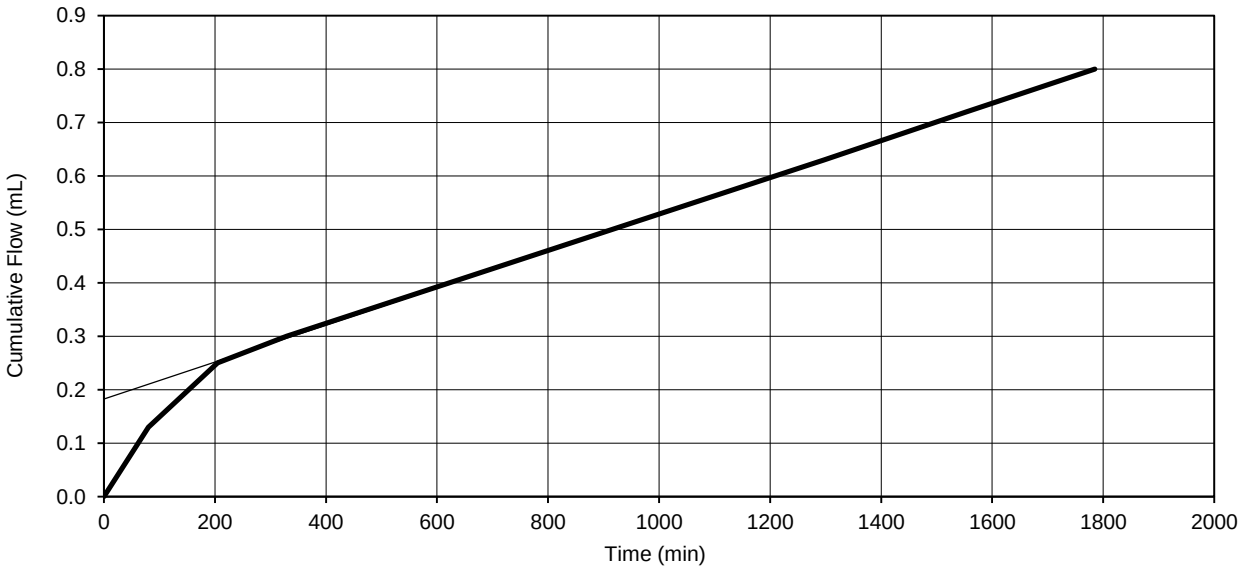
Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 7.6×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	Core
Sample Ref.:	C2L7
Sample Type:	C

Description:
Stiff dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.49	99.32
Height	*mm*	99.44	99.27
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.08	2.14
Dry Density	*Mg/m³*	1.70	1.71

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.51	0.97

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	3.8

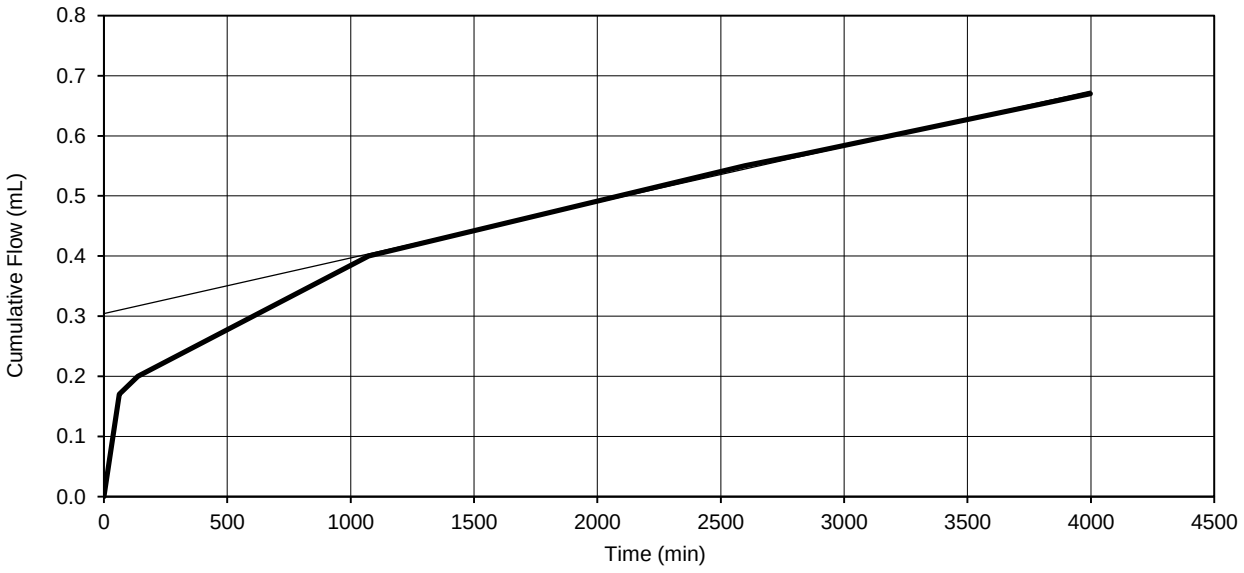
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 1.9×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Streetscene
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Appendix 3 - Moisture content/dry density for Compaction

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1886**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/10/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-B5-C1	Core 2 B4-B5-C1			
Bulk Density	2.08	2.14			
Moisture Content	18	18			
Dry Density	1.77	1.81			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	4.0	1.1			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee — R Anstee, Materials and Field Testing Director	Date 22/10/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1901**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**23/10/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-B5-C1	Core 2 B4-B5-C1			
Bulk Density	1.99	2.07			
Moisture Content	23	22			
Dry Density	1.61	1.69			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	3.4	0.4			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 24/10/2018
			R Anstee, Materials and Field Testing Director	Fig

Streetscene
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Appendix 4 – Field Logs

Available on request

Streetscene
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Appendix 5 – Hand Shear Vane

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1887	B2-B5 19.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1888	B2-B5 22.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1889	B2-B5 10.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1890	B4-B5 10.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	115	
1891	B4-B5 10.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1892	B4-B5 10.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
	King Road Avenue, Bristol, BS11 9HF	R. Anstee	22/10/2018	
Rev 1.0	Tel 0117 9821473	R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1902	B2-B5 23.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1903	B2-B5 23.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1904	B2-B5 23.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	120	
1905	B4-B5 23.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1906	B4-B5 23.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130	
1907	B4-B5 23.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	105	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver R. Anstee	Date 24/10/2018	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director		

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Appendix 6 – PI, PL, MC, LL Results

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B1 L5	GT1	0.00		B	Grey slightly sandy GRAVEL			19.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/10/2018	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 B1	GT2	0.00		B	Grey slightly sandy CLAY			20.5	100	47	22	25		
G5 B1	GT1	0.00		B	Grey slightly sandy CLAY			19.8	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
18/10/2018	Lisa Maiden	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m3	Density dry Mg/m3	w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 B3	RA6	0.00		B	Grey slightly sandy CLAY			17.8	100	48	21	27		
C5 B2	RA1	0.00		B	Grey slightly sandy CLAY			18.6	100	47	21	26		
E5 B2	RA2	0.00		B	Grey slightly sandy CLAY			18.9	100	48	21	27		
E5 B3	RA5	0.00		B	Grey slightly sandy CLAY			18.1	91	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Liquid Limit — Particle density
Linear measurement unless : — 4pt cone unless : — sp - small pyknometer
wd - water displacement — cas - Casagrande method — gj - gas jar
wi - immersion in water — 1pt - single point test

Date Printed	Approved By	Table
18/10/2018	Lisa Maiden	1
		sheet 1

Streetscene
Y-Strydynun

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Appendix 7 – Photographs

Streetscene
Y-Strydynun

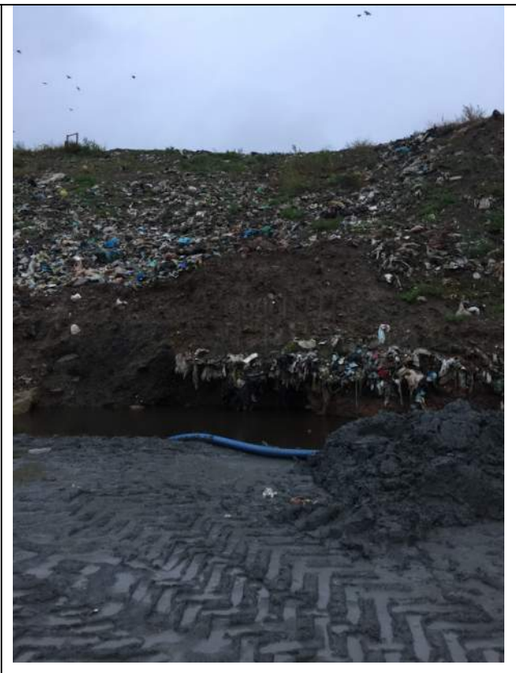
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South Wales/De Cymru
NP20 4UR



Monday 15 October 2018 from Grid B4



Monday 15 October 2018 from Grid B5 along top of finish bund level



Monday 15 October 2018 from Grid D1 leachate flowing

Streetscene
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Wednesday 17 October 2018 Grid D1 rain water at sump



Friday 19 October 2018 from Grid C3 Batter from B2 to B5 complete to 2m above base



Friday 19 October 2018 from Grid B3 substantial completion of clay material

Appendix 2 CQA Plan

Area 2, Docksway Disposal Site Newport

Construction Quality Assurance Plan & Performance Specification for Cell 4 Basal Clay Lining

On behalf of **Newport City Council**

NEWPORT CITY COUNCIL
CYNGOR DINAS CASNEWYDD

Project Ref: 14739/3532 | Rev: CQA_4_rev01 | Date: June 2018

Office Address: Caversham Bridge House, Waterman Place, Reading, Berkshire RG1 8DN
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Document Control Sheet

Project Name: **Area 2, Docksway Disposal Site, Newport**

Project Ref: **14739/3532**

Report Title: **CQA Plan for Cell 4 Basal Clay Lining**

Doc Ref: **CQA_4_rev01**

Date: **15th June 2018**

	Name	Position	Signature	Date
Prepared by:	Olivia Esler	Assistant Geotechnical Engineer	OE	15/06/2018
Reviewed by:	Kate Riley	Associate	KR	15/06/2018
Approved by:	Richard Thomas	Senior Consultant	RHT	15/06/2018
For and on behalf of Peter Brett Associates LLP				

Revision	Date	Description	Prepared	Reviewed	Approved
00	06/2018	DRAFT	OE	VKR	RHT
01	06/2018	ISSUE (following receipt of CQA Inspector info from NCC)	OE	VKR	RHT

This report has been prepared by Peter Brett Associates LLP ('PBA') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which PBA was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). PBA accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.

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Figure 1: Acceptance Envelope

Appendices

Appendix 1: CQA Inspector CV

Appendix 2: Field Compaction Trial

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1 General

1.1 Introduction

1.1.1 This Construction Quality Assurance (CQA) Plan and Performance Specification has been prepared by Peter Brett Associates LLP (PBA). It applies to the basal clay lining works that are required as part of the construction of the next engineered waste containment cell (Cell 4) in Area 2 of Docksway Disposal Site, Newport.

1.1.2 The general principles of the basal clay lining works have previously been provided as part of the revision to the Environmental Permit (EPR/DP3733BK) for the site in 2015. This describes that the Engineered Barrier System (EBS) incorporates a minimum 1.2m thick engineered clay liner constructed over the natural geological barrier that exists at the site. This CQA plan describes the processes, methods, tests and controls that will be applied to the importation and construction of the engineered clay liner. The general principles of the basal clay lining works have previously been applied to completed Cells 1, 2 and 3 at the site.

1.1.3 The objectives of this CQA Plan are to define the roles and responsibilities of the various parties involved in the contract for the basal clay lining works. It also sets out the quality procedures to be adopted during the construction works in order to promote effective management of the contract and provide verification that the construction works have been undertaken to meet the requirements of the design.

1.1.4 The objectives of the Performance Specification are to define the compliance criteria that are required to be achieved by the completed liner, and the acceptability limits and testing frequency required during the construction of the liner to meet the requirements of the guidance provided in Environment Agency (EA) document LFE 4 – Earthworks in landfill engineering.

1.2 Definitions and Duties

Definitions

1.2.1 In the context of this document, the following definitions shall apply:

1.2.2 **Construction Quality Assurance (CQA)**: A systematic, planned and recorded series of actions designed to provide confidence that items, services or activities meet contractual or regulatory design and specification requirements and will perform satisfactorily in service. The CQA for the basal clay lining works will be recorded by an independent CQA Inspector and certified by a CQA Engineer based on test and results provided by the Contractor and records and reports provided by the CQA Inspector.

Parties (Definitions)

1.2.3 The following parties shall be defined as follows, with associated duties:

1.2.4 **Employer** means the person or persons, firm, company, or other body who own and have responsibility for the facility. The Employer has entered in to a contract with the Contractor for the execution of the Works specified in the Contract Documents provided by the Employer.

1.2.5 **Contractor** means the person or persons, firm, company or other body to whom the Contract has been awarded by the Employer, and includes the Contractor's personal representatives or other parties, for example, Sub-Contractors. The Contractor is the party responsible for the preparation and construction of the works as described within the Contract documents, and for ensuring that the clay liner meets the minimum requirements of the Performance Specification.

1.2.6 **CQA Engineer** means the person appointed by the Employer to act as independent CQA Engineer for the purposes of the Contract to provide independent oversight, technical direction and verification that the works, as recorded by the CQA Inspector, are constructed and recorded in accordance with the CQA Plan and Performance Specification. The CQA Engineer shall be responsible for the preparation of the CQA Validation Report.

1.2.7 **CQA Inspector** shall be responsible for the day to day technical direction, oversight and recording of all of the works undertaken as part of the basal clay lining works contract.

Parties (Roles)

1.2.8 The **Employer** is Newport City Council, who shall:

- prepare the contract documents and drawings and appoint the Contractor, CQA Engineer and CQA Inspector;
- review other site-specific documentation including proposed layouts and Contractor's qualifications;
- review all changes to the design, drawings, and specifications;
- oversee budgetary and contractual matters;
- provide day to day management of the works and direction to the Contractor;
- provide surveying services;
- provide setting out in accordance with contract documents;
- provide technical support where required;
- attend pre-construction, progress, site and CQA-related meetings;
- liaise with all parties.

1.2.9 The **Contractor** is Jim Davis Civil Engineering Ltd, and they are responsible for undertaking the whole of the works in accordance with the Contract, and for providing a level of site attendance as defined in the Contract. The Contractor is responsible for control of the works, and for ensuring the suitability and acceptability of the source clay, and for ensuring sampling, testing and compliance of the clay liner are in accordance with the CQA Plan and Performance Specification. The Contractor will also ensure that all daily recorded and testing reports/results are made available to the Employer's CQA Engineer and the CQA Inspector.

1.2.10 The **CQA Engineer** is Peter Brett Associates LLP (PBA). The CQA Engineer:

- reviews the source material, specifies and attends the compaction trial.
- reviews the compaction trial results and prepares the CQA Plan and Performance Specification in general accordance with LFE-4;
- reviews information and reports provided by the CQA Inspector, attends site to monitor progress as required, attends progress meetings, and liaises with the CQA Inspector. Provides confirmation that the CQA Inspectors records indicate that the construction and performance of the clay liner is compliant with the CQA Plan and Performance Specification.
- prepares the final CQA Validation Report.

1.2.11 The **CQA Inspector** is Mr William Watt, and is located at the site and is directed and monitored by the Employer and CQA Engineer. The CQA Inspector:

- acts as the on-site representative of the Employer providing independent 3rd party monitoring of the works under the technical direction of the CQA Engineer;
- familiarises the Contractor with the CQA and Performance requirements for the project;
- manages the daily activities of the Contractor;
- attends all CQA-related meetings (for example, Pre-construction and Progress meetings);
- prepares the ongoing preparation of the Record Drawings;
- monitors and records on-site acceptability and compliance testing;
- assigns and records locations for testing and sampling;
- prepares daily reports and logs and a weekly written report for the CQA Engineer;
- reports to the CQA Engineer, and logs in their daily report any relevant observations;
- oversees the collection and shipping of all samples for laboratory testing;
- reviews results of laboratory testing and makes appropriate recommendations following discussion with the CQA Engineer;
- reports any unresolved deviations from this CQA Plan to the Employer and CQA Engineer;
- provides all logs and relevant data to the CQA Engineer for the preparation of the final report;
- reviews all Certifications and Documentation from the Contractor and makes appropriate recommendations.

1.2.12 The above list of the CQA Inspector's duties is not exhaustive and may include additional roles as required.

1.3 Relationship with Other Documents

1.3.1 In the event of ambiguity or conflict between this CQA Plan and Performance Specification and other Contract Documents, then in general the CQA Plan and Performance Specification shall take precedence, where the matter relates to acceptability and compliance of the clay liner. Should resolution on this basis not be possible, then the Employer, in consultation with the CQA Engineer, shall decide on which interpretation is applicable.

1.4 Key Personnel

1.4.1 The **Client** / **Employer** is: Newport City Council, Civic Centre, Newport, Monmouthshire, South Wales, NP20 4UR.

1.4.2 The **CQA Engineer** is: Peter Brett Associates LLP, Caversham Bridge House, Waterman Place, Reading, Berkshire, RG1 8DN.

1.4.3 The **CQA Inspector** is: Mr William Watt. CV presented in Appendix 1.

1.4.4 The **Contractor** is: Jim Davis Civil Engineering Ltd, Ty-Gwyn, Banalog Terrace, Hollybush, Blackwood, South Wales, NP12 0SG.

2 Design Philosophy

2.1 Area 2 General Design

2.1.1 Area 2 is designed on a full containment principle and includes a basal liner as part of an engineered barrier system designed to minimise risks to groundwater from potential leachate leakage. The design is in accordance with the 'Area 2 Engineering Design Philosophy' (PBA, 2004) and the 'Conceptual Model and Hydrogeological Risk Assessment for Area 2' (PBA, 2005).

2.1.2 The presence of a low permeability engineered clay barrier and the underlying natural geological barrier (the natural alluvial clays underlying the site) will act to minimise the leakage and transport of contaminants from the site.

2.1.3 The engineered barrier system (EBS) will comprise 1.2m of imported clay, which will be engineered to have a maximum permeability of 1×10^{-9} m/s. The underlying in-situ alluvial clays typically have a permeability of $<1 \times 10^{-9}$ m/s.

2.2 Clay Liner Design – Clay Source Evaluation

2.2.1 The clay to be used for the basal lining works will be from the Lower Lias Clay Formation, imported from Wingmoor Farm located at Bishops Cleeve in Gloucestershire. This is the same source material that has been used previously for the basal clay lining in Cells 2 and 3, and its suitability has therefore previously been fully demonstrated and accepted by Natural Resources Wales (NRW).

2.2.2 Notwithstanding the previous suitability testing, additional material suitability testing has been undertaken on twelve samples of the source clay. The source testing identified that the average Optimum Moisture Content (OMC) of the source material was 19% with an average maximum dry density (MDD) of 1.64Mg/m$^{3.}$ The moisture content of the 'as received' material was in the range between 15% and 25%. The average plastic limit was 22% and the liquid limit of each of the samples was <90% in accordance with LFE 4.

2.2.3 The classification and compaction testing results from the source clay samples were used to specify the criteria for remoulded permeability testing carried out in a triaxial cell and the results of these tests indicated a maximum permeability of 1.6×10^{-10} m/s (i.e. the source clay is capable of achieving the permeability requirements of the engineered clay liner).

2.2.4 The source testing results were used to define the ranges of acceptable limits for the specification of the imported clay, to be used initially in the clay compaction trial and then, subject to the results of the clay compaction trial, in the main basal clay lining works. Therefore, the acceptability limits for the imported clay were set as follows;

- Moisture content range: 19% to 26%. Based on the maximum mc for the material to achieve a minimum undrained shear strength (for trafficability) of 50kPa. The minimum is based on the mean plastic limit minus 3%.
- Plasticity Index: between 10% and 65% in accordance with LFE 4.
- Liquid Limit: ≤90% in accordance with LFE 4.
- Percentage fines <0.063mm: ≥20% but with a minimum clay content of 8% in accordance with LFE 4.

2.2.5 The compliance requirements for the constructed clay liner are provided in both LFE4 and set out in the Environmental Permit for the site. Therefore, the compliance limits for the clay liner are as follows;

- In situ density tests must demonstrate that material selection and compaction achieve an air voids content of not more than 5%.

- Permeability: ≤1 x 10^{-9} m/sec.

2.3 Methodology and Plant

2.3.1 The moisture content range of the 'as received' material from the source has been identified during the source evaluation as sometimes being outside of the acceptable moisture content range due to it being too dry. This has similarly been the case during previous cell development. Therefore, the proposed methodology includes for 'conditioning' the material on the site through the addition of water and mixing on site prior to laying the material within the cell. This process also helps to break down any clods of the material present. Once the material is conditioned, it will be transported to the working area and laid in layers of specified thickness (to be determined by the Contractor following evaluation of the trial results, see Appendix 1 and Section 2.4 below). Samples of the material will then be taken for acceptability testing and then the layer will be compacted using a CAT CS-573D vibrating roller with padfoot shell kit attached (vibratory tamping roller). Each layer will be subject to a minimum number of passes of the roller (to be determined by the Contractor following evaluation of the trial results, see Appendix 1 and Section 2.4 below), and then samples of the compacted material will be obtained using the core cutter method for laboratory permeability and in-situ density testing. The samples will be transported to a UKAS accredited laboratory appointed for the laboratory compliance testing.

2.4 Field Compaction Trial

2.4.1 A field compaction trial was undertaken at the site on the 15th May 2018 and this is described in Appendix 2. The laboratory results and destructive testing of the trial pad indicate that both methods of compaction could achieve the minimum compliance requirements for the clay liner.

3 Performance Specification

3.1.1 Based on the guidance provided in LFE4, the results of the clay source assessment and the field compaction trial, the following tables contain the specification for material acceptability and compliance. An acceptance envelope is provided as Figure 1.

Table 3.1 – Specification - Acceptability

Property	Value	Test Method
Water Content	19% - 26%	In accordance with BS EN ISO 17892-1: 2014. Bulk sample
Atterberg Limits	PL ≤90% PI 10-65%	In accordance with BS1377-2: 1990. Bulk sample
Particle Size Distribution	Percentage fines <0.063mm: ≥20% but with a minimum clay content of 8%	In accordance with BS EN ISO 17892-4: 2016. Bulk sample
Determination of undrained shear strength using Hand shear vane	>50 kPa	In accordance with BS1377-9: 1990.
Maximum clod size	No greater than 2/3rd compacted layer thickness	Visual observation and direct measurement.

Table 3.2 – Specification - Compliance

Property	Value	Test Method
Dry density/moisture content relationship (in situ density)	≤ 5% air voids	In accordance with BS 1377-9: 1990. Sampled by core cutter method. Results to be within acceptance envelope shown in Figure 1.
Determination of permeability in a triaxial cell	Maximum 1 x 10^{-9} m/s	In accordance with BS 1377-6: 1990. Sampled by core cutter method
Clay Liner Thickness	Minimum 1.2m	Topographic Survey

4 Quality Procedures and Testing Requirements

4.1 Setting Out / Survey

4.1.1 The Employer shall provide the Contractor with a topographical survey of the site and shall agree with the Contractor the precise extents of the basal clay lining. The basal clay lining shall key in to the existing clay lining beneath the adjacent Cells 1, 2 and 3 where appropriate. The Contractor shall apply a grid to the survey drawing, indicating the maximum extent of the proposed areas for clay lining. The grid shall comprise 25m by 25m cells and each grid cell shall be assigned a unique ID and shall have a unique set of co-ordinates to allow identification for sampling purposes. The Contractor shall undertake pre commencement and post completion topographical surveys to demonstrate the minimum 1.2m liner thickness has been achieved. The Contractor shall provide to the CQA Engineer the as built drawings and cross sections to demonstrate this.

4.2 Sampling and Testing Requirements

4.2.1 Sampling and testing of imported materials both pre- and post-compaction shall be undertaken in accordance with the Specification, reproduced in Tables 4.1 and 4.2 below. The testing laboratory must be UKAS accredited for the tests being undertaken.

4.2.2 The CQA Inspector will determine the locations for the proposed sampling, based on the frequency of testing specified and their site observations, and shall inform the Contractor accordingly. The Contractor shall arrange for these samples to be undertaken in the presence of the CQA Inspector or a representative from the CQA Engineer. Copies of all test data shall be provided by the Contractor to the CQA Engineer and the CQA Inspector. The CQA Inspector will keep a daily record of all the work carried out, samples taken and results received, and shall provide weekly summary reports of the work, detailing progress, problems, testing and the proposed work programme. These summaries will be included in the CQA Validation Report.

Table 4.1 Testing Schedule - Acceptability

Test/Requirement	Frequency	Comments
Lift Thickness	per cell/layer (uncompacted thickness)	Direct observation/measurement
Topographic survey	Prior to commencement (commencing surface) and on completion of the basal clay lining	-
Water Content	Minimum 1 per 250m^3	-
Atterberg Limits	Minimum 1 per 250m^3	-
Particle Density	1 per 500m^3	-

Test/Requirement	Frequency	Comments
Particle size distribution	1 per 500m³	-
Hand shear vane	3 per layer per 25m by 25m cell	To be included in CQA Engineers reports
Maximum clod size	Noted for each layer per 25m by 25m cell	To be included in CQA Engineers reports
Photographs	Daily	Must be labelled and referenced

Table 4.2 Testing Schedule - Compliance

Test	Frequency	Comments
Dry density/moisture content relationship (in situ density)	1 per layer, per 25m x 25m cell	Unique ID and labelling
Determination of permeability in a triaxial cell	1 per 2000m³	Unique ID and labelling

4.3 Reinstatement of Sample Locations

4.3.1 Sample locations will be reinstated by replacement with conditioned material and hand tamped into place.

4.4 Clay Liner Acceptance

4.4.1 The clay liner shall be considered acceptable in respect of the Landfill Directive and Environmental Permit when:

- it has been verified that the Contractor's setting out, construction thickness and slope gradients conform with the Contract drawings and documents;
- placement has been undertaken correctly to achieve < 5% air voids;
- all permeability tests record a coefficient of permeability (k) of not greater than 1 x 10^{-9} m/s;
- all acceptability and compliance tests show conformance to the Performance Specification.

4.4.2 In addition, in order to form a suitable working platform for landfill construction, the clay liner shall have an undrained shear strength of not less than 50 kPa.

4.5 Contractor's Records

4.5.1 The Contractor shall record the following information and provide the information to the CQA Engineer and CQA Inspector in weekly progress reports:

- Number of layers/grid squares completed (that week and cumulative);
- Site photographs;
- Total volume of material placed that week;
- Acceptability and compliance test results for that week, including laboratory certificates;
- Description of any failures of acceptability or compliance tests and proposed remedial actions; and
- Minutes of site/progress meetings.

5 Documentation

5.1 Document Collation

5.1.1 The CQA Inspector will document that the Specification has been satisfied during construction. The CQA Inspector will maintain a site file of plans and specifications, checklists, test results, daily records, record drawings, photographs, and other pertinent documents. The Contractor shall provide the following documents to the CQA Engineer and CQA Inspector

- Laboratory details and accreditation certificates
- Test results
- Weekly reports
- Construction drawings

5.1.2 The CQA Inspector shall promptly acknowledge receipt, review documentation, and either acknowledge that the information is satisfactory, or reject and provide reasons for doing so.

5.1.3 Should the CQA Inspector not receive this information, or if the information is unsatisfactory or not in compliance with the Specification, then the CQA Inspector shall reject the works related to the unsatisfactory/missing information, and the works shall not be allowed to proceed.

5.2 Daily Reports

5.2.1 The Contractor shall provide the CQA Inspector with daily reports which detail the following:

- the volume of material and number of layers placed, and their location with reference to the grid cell layout drawing;
- the location and unique identification number (ID) of any samples obtained;
- the results of any laboratory or in-situ testing, cross-referenced to the sample IDs;
- location and volume of any materials removed as a result of failed testing.

5.2.2 In addition, the CQA Inspector shall maintain a Daily Diary, which will contain the following:

- Prevailing weather conditions
- Contractor's plant and personnel
- Work undertaken (cross-referenced to the grid layout plan) and results received and reviewed.
- Construction problems and solutions
- Record of site visitors
- Photographs of work progress

5.2.3 Upon completion of the works, the CQA Inspector will prepare an 'as-built' layout plan of the works that will be referenced to the site records, together with results of all testing carried out.

5.2.4 The CQA Inspector will prepare and forward a weekly report to the CQA Engineer.

5.2.5 All of the above will be forwarded as one complete package by the CQA Inspector to the CQA Engineer on completion of the works, to be utilised for, and included within, the CQA Validation Report that will be prepared by the CQA Engineer.

5.3 CQA Validation Report

5.3.1 At the completion of the project, and once the CQA Engineer has received all the necessary and required data from the CQA Inspector, the CQA Engineer will provide to the Employer and to Natural Resources Wales (NRW), a signed Construction Quality Assurance Validation Report, which will outline the works undertaken in compliance with the Specification and CQA Plan. At a minimum, it will include:

- Project description.
- Contractor's submissions.
- Daily/weekly logs/records as received from the CQA Inspector.
- As-constructed drawings received from the CQA Inspector/Employer.
- Testing (laboratory) certificates.

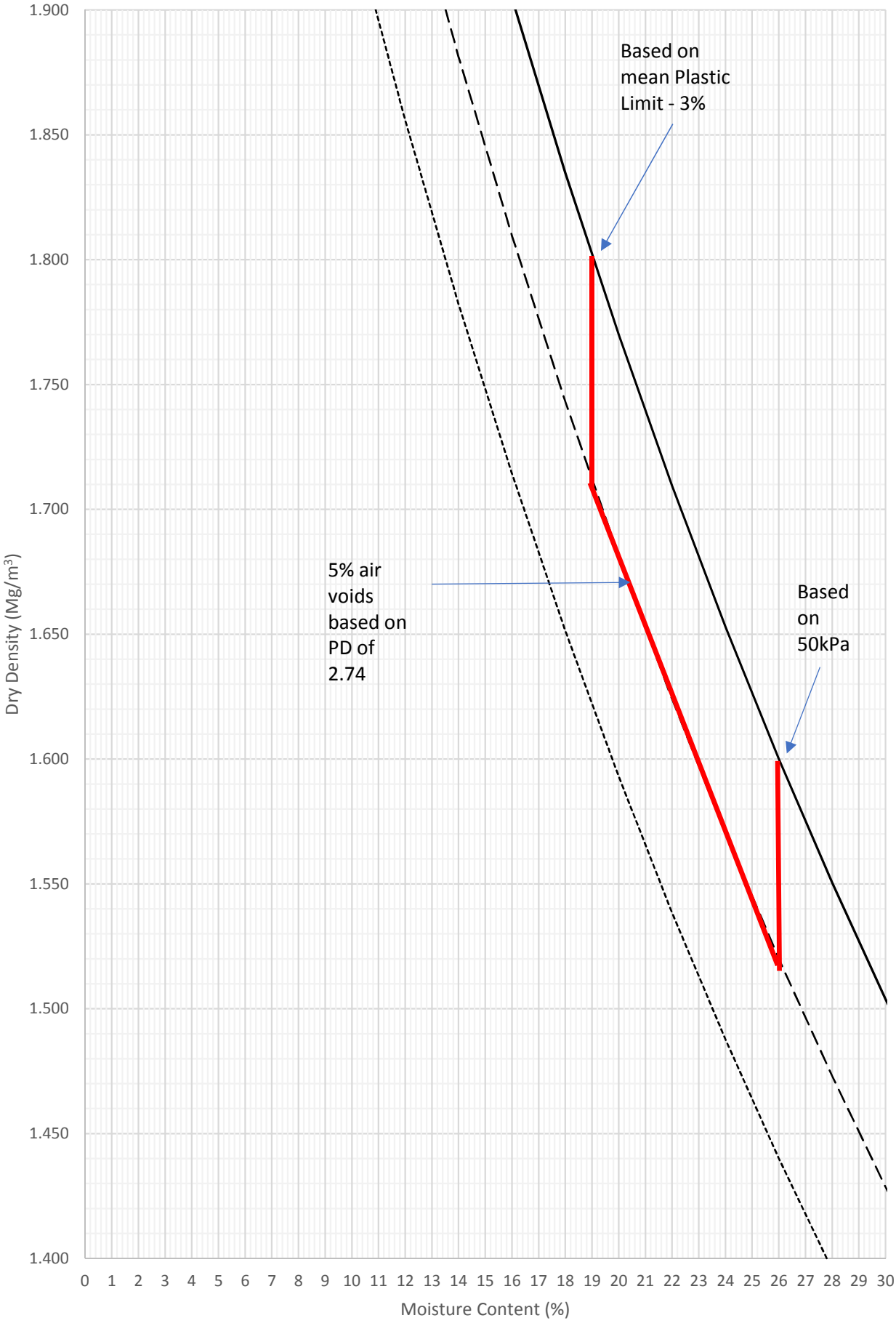
References

EA, 2014 Earthworks in landfill engineering: Design, construction and quality assurance of earthworks in landfill engineering. EA document reference LFE4, dated June 2014. Environment Agency.

MCHW, 2016 Manual of Contract Documents for Highway Works. Volume 1, Specification for Highway Works. Series 600 – Earthworks. Department for Transport, 2016 amendment. Accessed via www.standardsforhighways.co.uk.

6 Figures

Figure 1 - Acceptance Envelope



7 Appendices

CAPITA



William Watt- Project Manager & construction Supervision

Chartered Professional Engineer 50554557
MB(App.Fin) Master of Business (Applied Finance), Queensland University of Technology, AUS 2008
B.Eng Civil (Hons) Bristol University UK 1996,

Profile

William has developed his engineering experience since 1996. He has managed and delivered infrastructure planning, design, supervision and verification projects.

William has experience in project management and supervision of civil design, analysing construction and delivering design policy, procedure and programs. He has undertaken due diligence, value engineering and variation assessments under various contract forms.

Key Experience

- contract administration and procurement for Infrastructure, property, highway and civil work, systems and procedures development including quality assurance, health and safety and Environment;
- Design and supervision of infrastructure: highways, drainage, hard standings, pavement, cycleway, traffic analysis implementation, signs and lines, public utilities plant, minor structures and civil works for ITS, lighting, mechanical and electrical

Project Experience

2016 Capita Infrastructure and Property Consulting Engineers

William is a Project Manager for the design and delivery of infrastructure projects.

2016-2018 Wales: Brynglas Tunnel Refurbishment, Newport

Civil Design Lead Client: Costain Group Plc

William was the civil design lead for the M4 Brynglas tunnels referbishment. The tunnels were originally built in 1967 and are twin bore 360m long. My tasks included the development of the reference design and he managed the engineering discipline leads in hydraulics, geotechnics, environment, highways, pavement, structures and tunnel civil works.

Supervision, monitoring and design instructions for the onsite geotechnical testing for the pavement and geotechnical works

2011 Australia: Woogaroo Creek sewer TBM Shaft, Goodna,

Site supervision and design variations
Client: WDS Construction

Construction certification for onsite testing and design variations for the sewerage thrust bore tunnel access shafts and temporary road diversion. The work comply with all safety requirements of the Principal Contract Theiss.

2008 Australia: Hale St Link (Go Between Bridge) Alliance, Brisbane

QA Manager identifying appropriate testing and QA

Client: Hale Street Alliance- Seymour Whyte, Macmahon, Bouygues Travaux Publics in an alliance, Hyder Consulting and Brisbane City Council

William was part of the team that produced the target cost estimate design for a AUD $320 million Brisbane City Council Design & Build Alliance project. William worked with the construction team to develop the testing requirements for the design and construction. The design was for; a bridge across the Brisbane River, online

junction improvement and connecting infrastructure.

2007 Australia: Grant and Station Road Junction Improvements, QLD

Design Manager Client: Moreton Bay regional Council

A AUD 60,000 project for Caboolture Shire Council to design the upgraded and signalised two existing junctions. Supervising the onsite pavement foundation testing to confirm the

2003 - 2006DynCorp International, Sultanate of Oman

William was head hunted to plan and deliver engineering services for the US Air Force War Reserve Material facilities repair and renewals program. With the Chief Engineer, William reported to DynCorp's Management team and US Air Force. William developed approved project scopes, a work program, external consultants' designs, contractors' award, site supervision and answered technical queries.

2000 - 2003WS Atkins, UK and Sultanate of Oman

During his time at WS Atkins William developed from a highways design engineering role to design management and project management roles for the Highways Agency Area 2 program. William joined WS Atkins International team and was seconded to the Oman office to provide engineering design support for Civil Infrastructure projects.

2002 Sultanate of Oman: Khasab Port Expansion—Khasab

Resident Engineer Client: Ministry of Transport and Fisheries

An OMR 17 million project for the Ministry of Transportation Construction—supervised the construction of a 180 m quay wall, dredging, land reclamation, construction of breakwaters and monitoring of quarrying operations.

2002-2000 UK: M4 Motorway Junction 14 to 15 Earthworks stabilisation

Project Manager Client: Highways Agency

A GBP 2 million framework contract for Highways Agency—managed the design and construction of 1 km of earthworks stabilisation; and responsible for the geotechnical design, drainage and specification.

1997 - 2000Parsons & Brinckerhoff, UK

William developed his skills under supervision as a graduate highways engineer providing design and resident engineering services for the local and state networks within the southwest Wales region.

1997-2000 UK: A40 Carmarthen Eastern Bypass, Wales

Graduate Engineer & Supervision Client: National Assembly for Wales

A GBP 27 million construction project for National Assembly for Wales constructed in an environmentally sensitive area in West Wales, William supervised the construction of structures, earthworks and highways.

1997-2000 UK: A485 On-Line Road Improvement, Wales

Graduate Engineer Client: Carmarthen County Council

A GBP 7 million construction project for Carmarthen County Council, as part of a design team, William produced road alignment, pavement, drainage and structure designs for a project in the heart of rural Wales. William assisted within the public enquiry process developing documentation.

1996 - 1997 UK: Powys Engineering Consultancy, Wales

Having graduated from Bristol University William undertook freelance work as a minor works engineer for

Appendix 2: Field Trial Description

A field compaction trial was carried out on site on 15th May 2018, using stockpiles of imported clay from the source at Wingmoor Farm quarry, Bishops Cleeve. The material was conditioned on site. The conditioning was observed by the Contractor, the Employer and the CQA Inspector, and was controlled on site by the Contractor using MCV testing.

Following conditioning, an initial sacrificial basal layer was placed within the footprint of the proposed Cell 4, as marked out by the Contractor. The sacrificial base layer was not subject to any testing, in accordance with LFE4, but was compacted in two halves, in accordance with the proposed methodologies. The area marked out for the trial measured 14m wide, by 20m in length and additionally included ramps for acceleration and deceleration. The materials were brought from the stockpile to the trial area by a dumper and spread using a tracked dozer.

The trial pad was split into two halves with one half comprising un-compacted layers 300mm thick and subject to 12 passes of the roller, and the other half comprising un-compacted layers 250mm thick and subject to 6 passes of the roller. Each half of the trial pad received a total of 4 layers including the sacrificial base/first layer and therefore testing was undertaken on layers 2 through to 4 only.

Once the sacrificial base layer was completed, the second layer was placed with material from the conditioned stockpile. Disturbed sample for MCV testing and representative bulk samples were obtained from the placed material prior to spreading to the required thickness. A field MCV test was then carried out on the sample prior to the layer being compacted. The bulk samples were scheduled for moisture content, Atterberg limits, particle size distribution, particle density and compaction testing.

Following compaction of the second layer, four core samples were obtained by CJ Associates Site Testing Services from the completed layer. Laboratory permeability and density testing were scheduled on two of the cores, whilst the other two were taken as 'reserve' cores in case re-testing was required. Three hand shear vane (HSV) tests were carried out on the completed layer.

A further two layers were completed as described above until three layers had been placed, compacted, and sampled, in accordance with LFE 4, all on top of the sacrificial base layer

Once all four layers were completed, a trench was cut through both trial pad halves to allow visual observation of the effectiveness of the different compaction methods. The trench was inspected by the Employer, the Contractor, and the CQA Inspector to identify the presence of any oversize materials, clods, the achieved thickness and the nature of the inter-layer bonding. The conclusions are described in Section 2.4 of the main text of the CQA Plan and Performance Specification.

The results of the field and laboratory testing are summarised in Table A1 below.

DRAFT

Table A1 Summary of Compaction Trial Testing Results

	Trial Pad 1: 250mm – 6 passes			Trial Pad 2: 300mm – 12 passes		
	Layer 2	Layer 3	Layer 4	Layer 2	Layer 3	Layer 4
MC (%)	17-20	23-25	19-23	21-23	19-20	20-21
LL (%)	47-48	48	48	48-50	48	47-49
PI (%)	21-22	23-24	22	23-25	22	21-23
Percentage Fines <0.063mm	93-97	97	98	97-98	96-98	97-98
HSV (kPa)	120*	81*	100*	104*	79*	130*
% air voids	<5	<5	<5	<5	<5	<5
Permeability (m/s)	7.9×10^{-11}	4.3×10^{-11}	7.8×10^{-11}	4.4×10^{-11}	3.0×10^{-11}	1.2×10^{-10}

* denotes average value based on 3 readings

DRAFT

Appendix 3 Drawing Number 14793/155/001

CELL 4A

CELL 4B

CELL 3A

CELL 3B

Northern Bund

Western Cell Division Bund

Cell Division Bund

Spine Drain

Feeder Drain

Temporary Rodding Eye

Temporary Rodding Eyes

Sump

MW

A

B

C

D

E

0 10 20
metres

Key

- Spine Drain
- Feeder Drain
- Sump
- MW Monitoring Well
- Side Slope Sump
- Rodding Eye

Mark	Revision	Drawn	Date	Chkd

SCALING NOTE: Do not scale from this drawing. If in doubt, ask.

UTILITIES NOTE: The position of any existing public or private sewers, utility services, plant or apparatus shown on this drawing is believed to be correct, but no warranty to this is expressed or implied. Other such plant or apparatus may also be present but not shown. The Contractor is therefore advised to undertake his own investigation where the presence of any existing sewers, services, plant or apparatus may affect his operations.

Drawing Issue Status

DRAFT

DOCKSWAY DISPOSAL SITE AREA 2, CELLS 3 AND 4 GENERAL ARRANGEMENT AND LEACHATE EXTRACTION DETAIL

Client

NEWPORT CITY COUNCIL

Date of 1st Issue	Drawn by
20.03.2015	davco
A1 Scale	Checked by
1:500	VKR/PJ
Drawing Number	Revision
14739/155/001	0

peterbrett

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READING
Tel: 0118 950 0761

User name: david.colton

File Location: j:\14739\155 - permit revision 2015\03_ figures & drawings\cad\dwgs\14739_155_001.dwg

Appendix 4 Laboratory Test Results

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		E2L3	BB	Dark grey silty CLAY	2.69	2
GT6		E5L3	BB	Dark grey silty CLAY	2.67	2
GT8		C4L1	BB	Dark grey silty CLAY	2.67	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

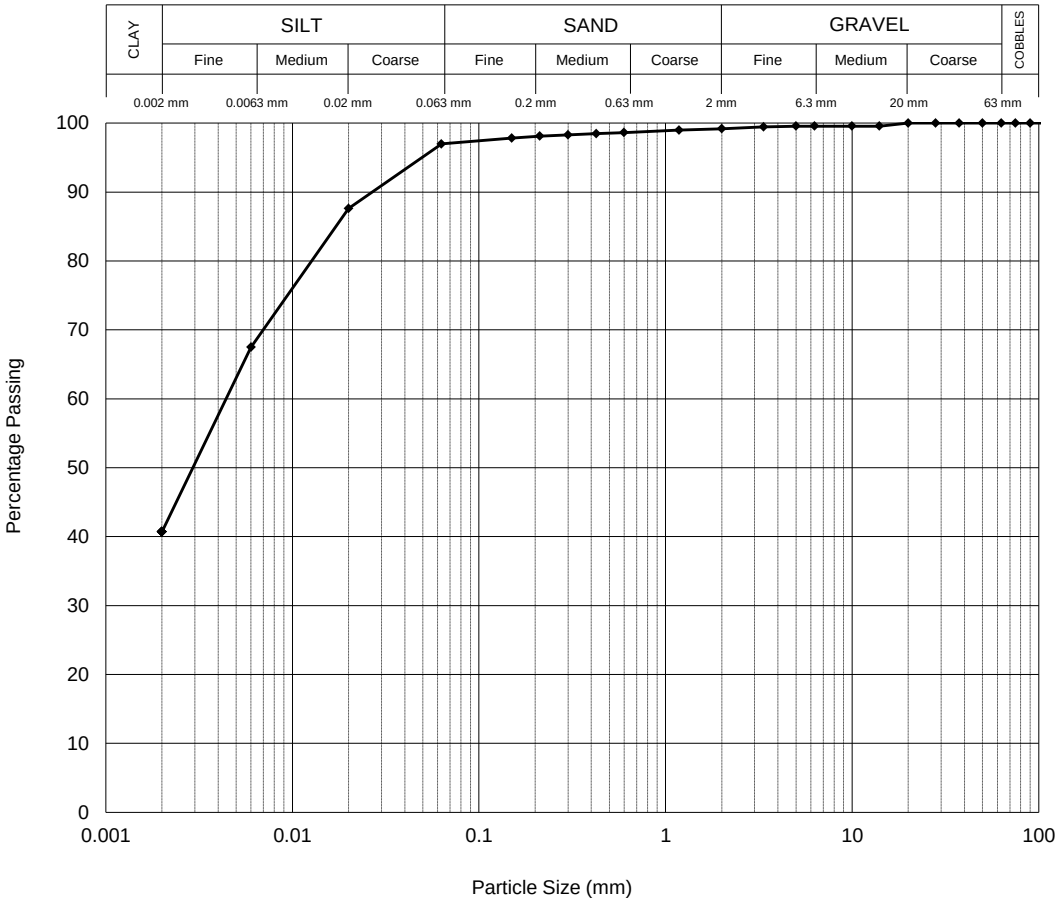
BH / TP No.	GT3
Sample Ref	E2L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	67
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

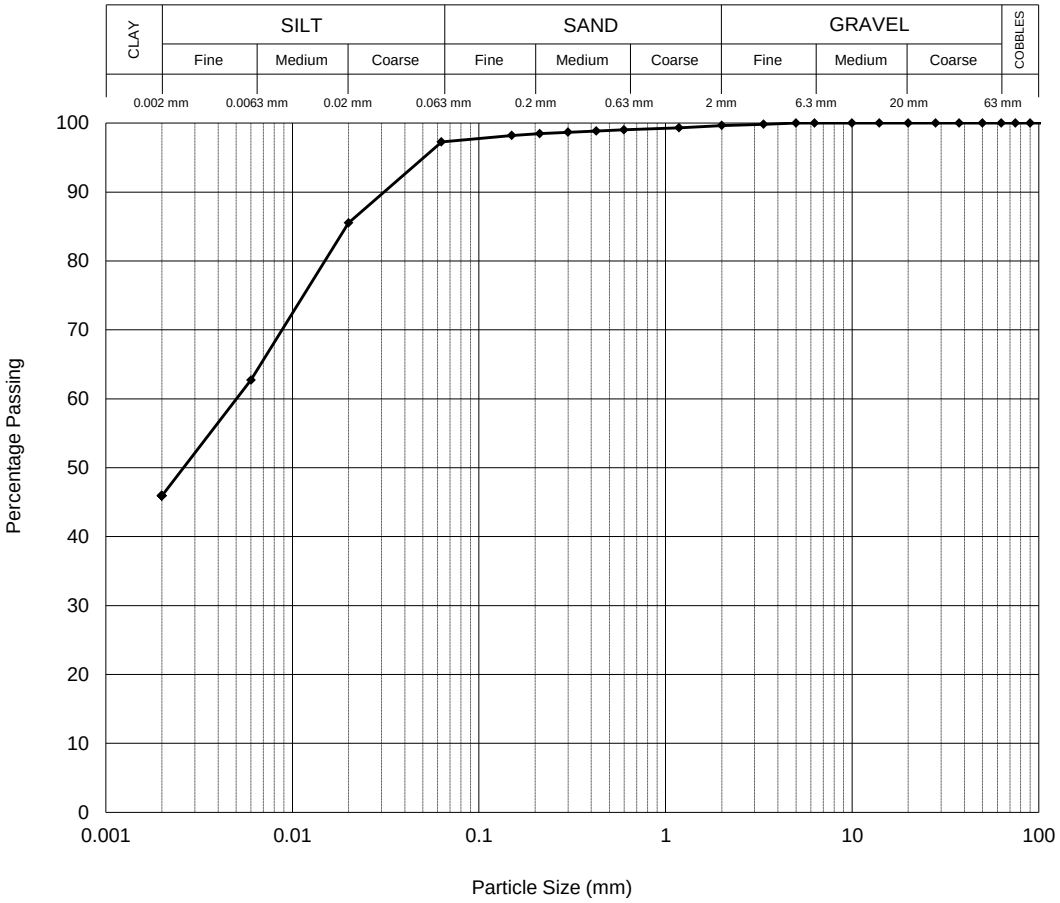
BH / TP No.	GT6
Sample Ref	E5L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	46

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	51
Clay	47

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

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Project Name:

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

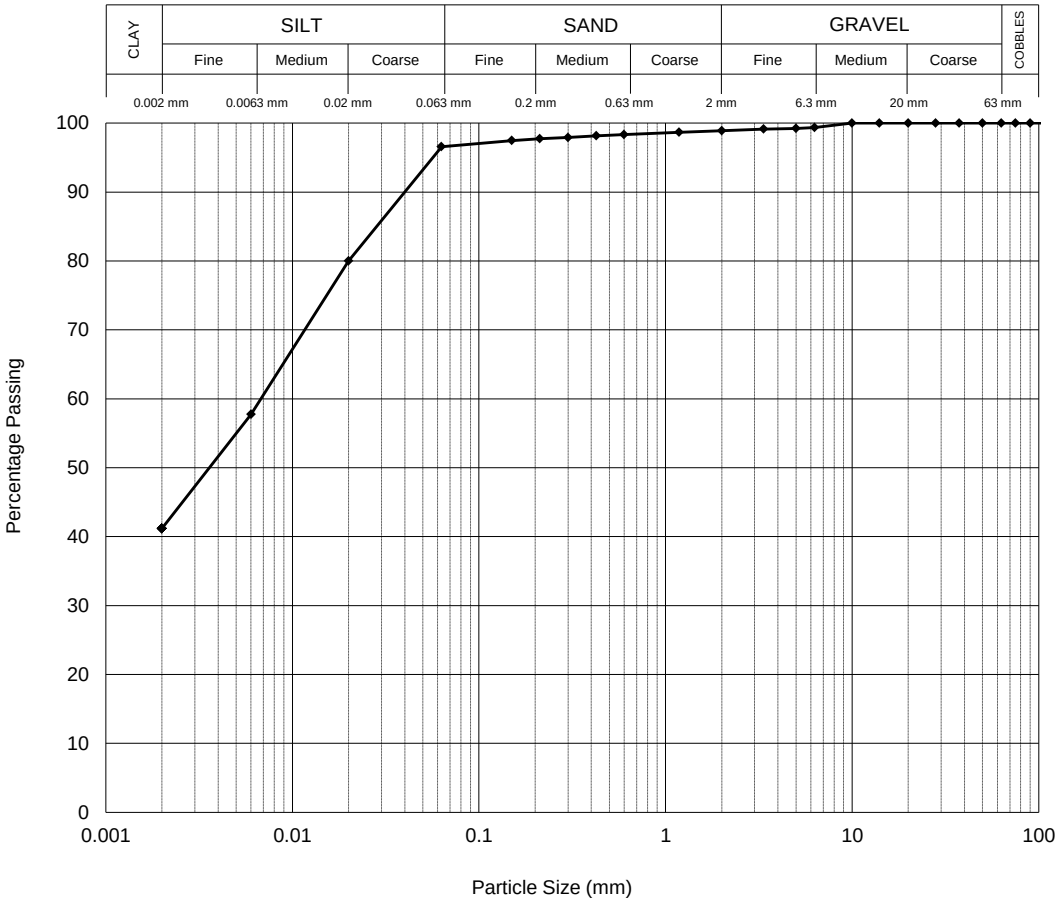
BH / TP No.	GT8
Sample Ref	C4L1
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F3L2		Dark grey clayey SILT with rare fossil fragments.	2.70	2
GT4		F4L2		Dark grey CLAY and SILT with rare fossil fragments.	2.67	2
GT7		C4L7		Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

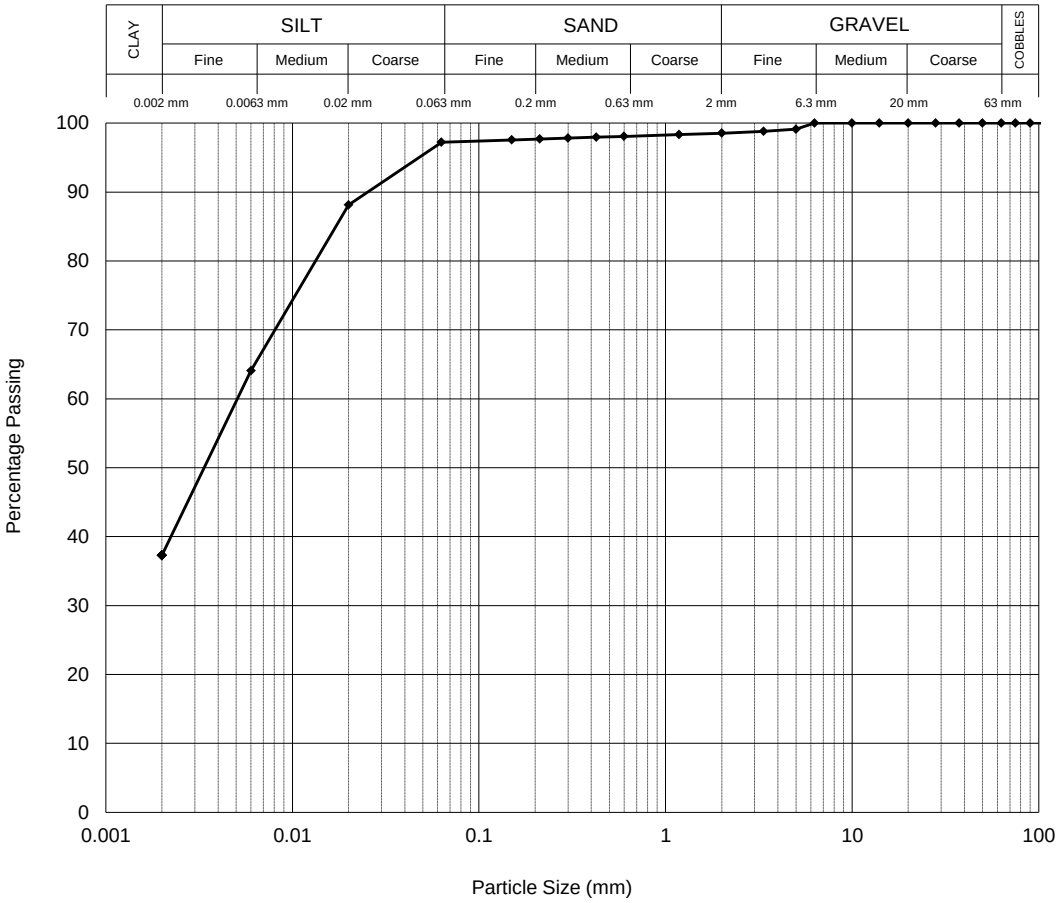
BH / TP No.	GT3
Sample Ref	F3L2

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	64
2 µm	37

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	60
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

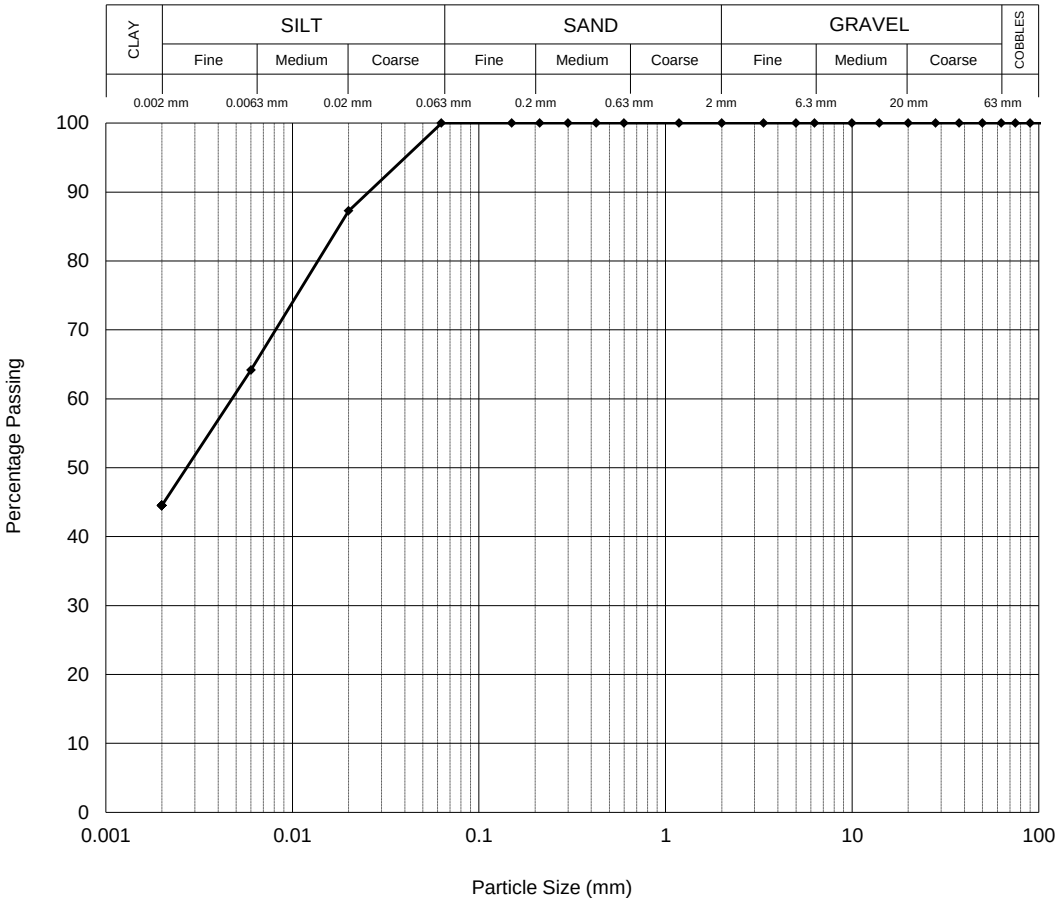
BH / TP No.	GT4
Sample Ref	F4L2

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	100
212 µm	100
150 µm	100
63 µm	100



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	64
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	0
Silt	55
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

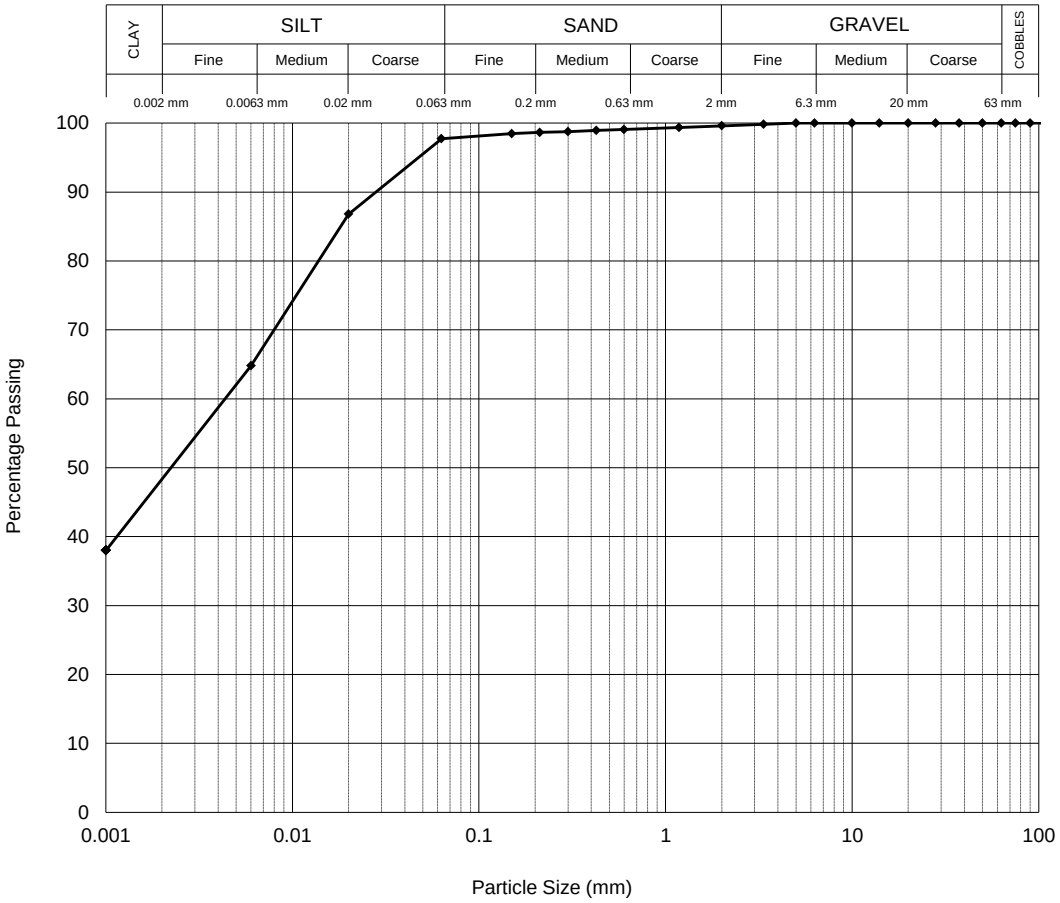
BH / TP No.	GT7
Sample Ref	C4L7

Description

Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
1 µm	38

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E4L2		Dark grey CLAY and SILT with rare medium gravel and fossil fragments.	2.66	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1536075363)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

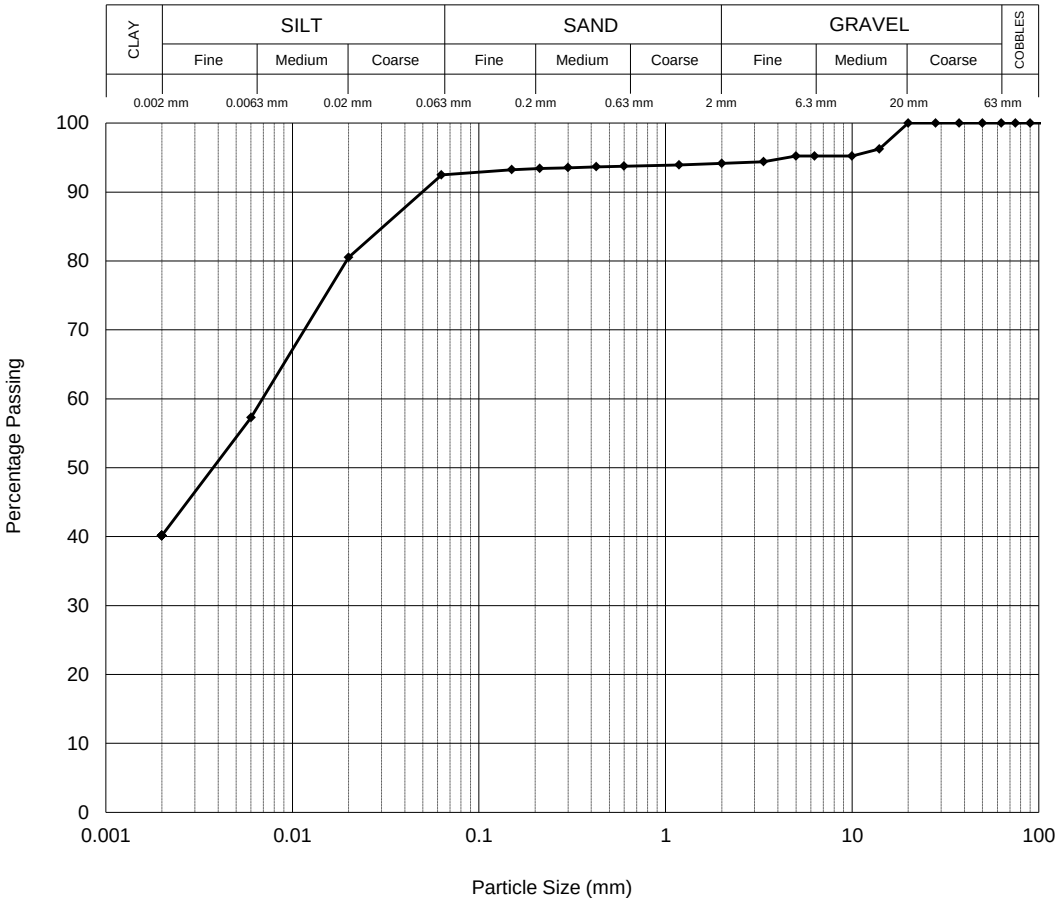
BH / TP No.	GT1
Sample Ref	E4L2

Description

Dark grey CLAY and SILT with rare medium gravel and fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	96
10.0 mm	95
6.30 mm	95
5.00 mm	95
3.35 mm	94
2.00 mm	94
1.18 mm	94
600 µm	94
425 µm	94
300 µm	94
212 µm	93
150 µm	93
63 µm	92



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	57
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	6
Sand	2
Silt	52
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D3L1	B	Dark grey clayey SILT with rare fossil fragments.	2.70	2
GT4		G2L4	B	Dark grey CLAY and SILT with rare fossil fragments.	2.73	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

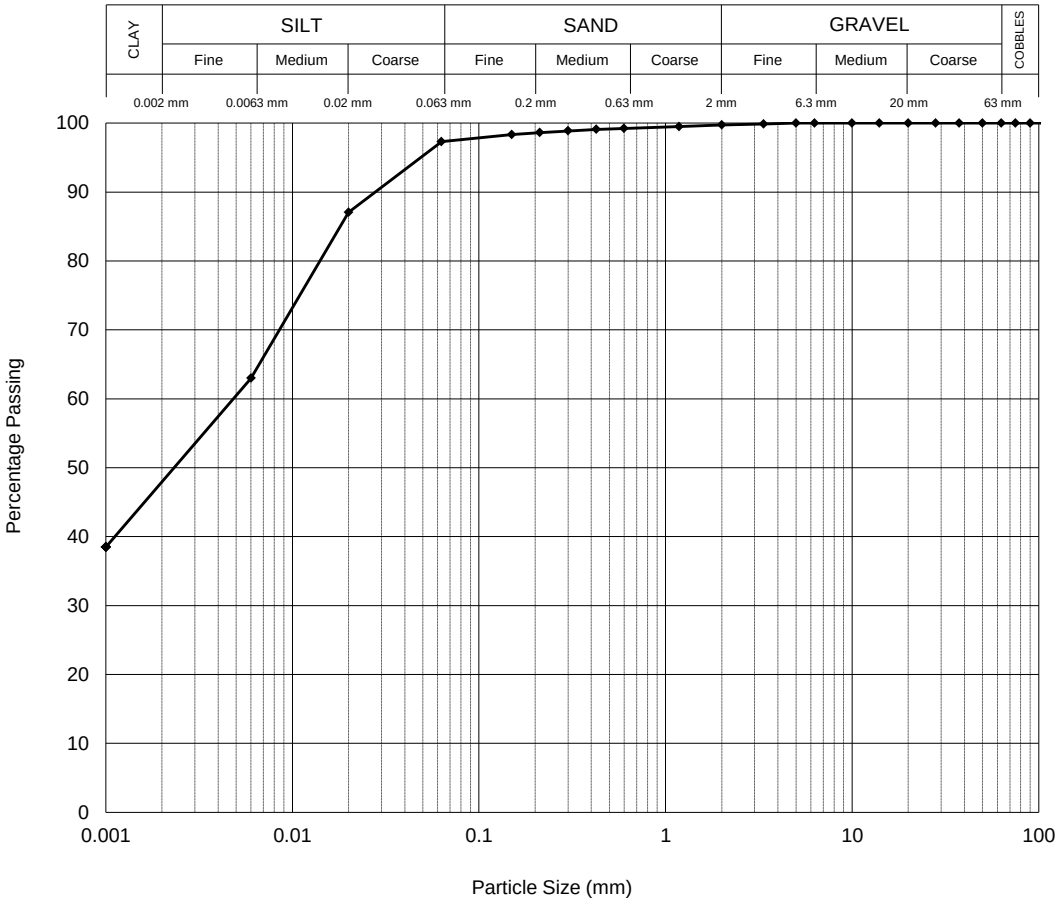
BH / TP No.	GT2
Sample Ref	D3L1
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	63
1 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

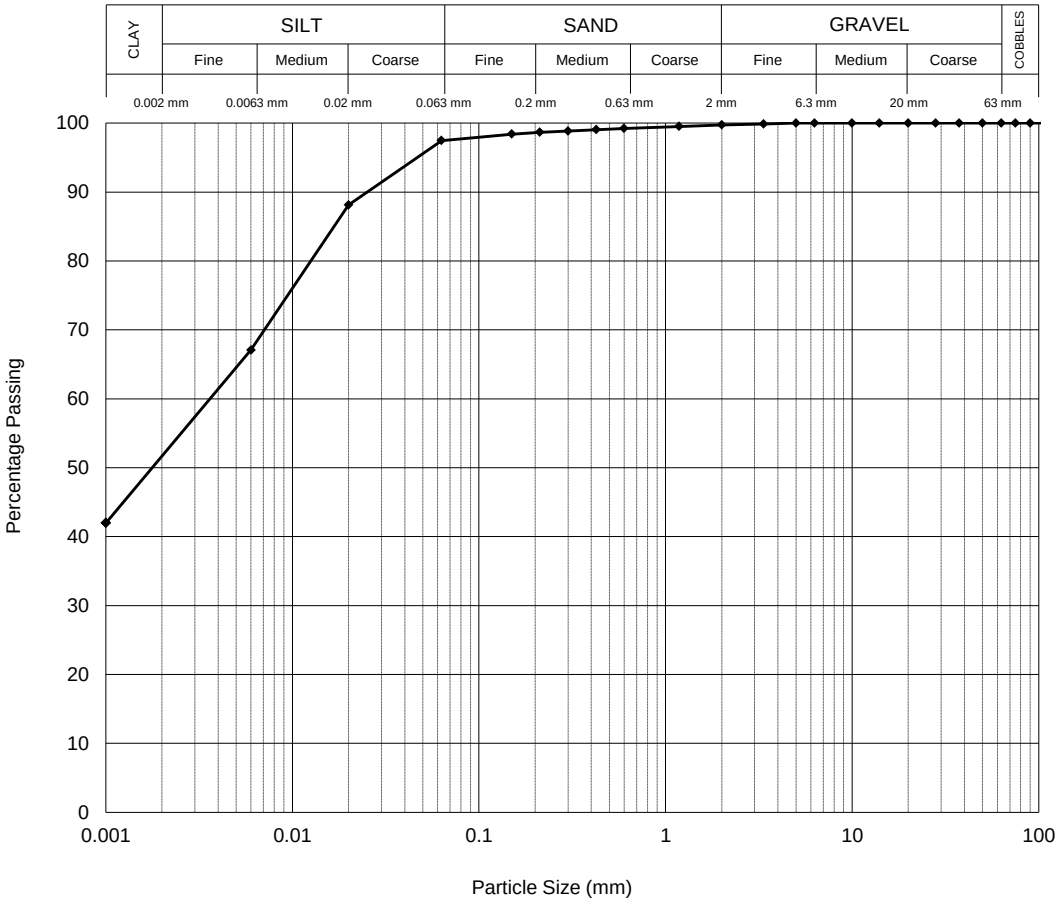
BH / TP No.	GT4
Sample Ref	G2L4
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	67
1 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	50
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		F5-L3	B	Dark grey clayey SILT with rare fossil fragments.	2.67	2
GT6		F4-L4	B	Dark grey CLAY and SILT with rare fossil fragments.	2.67	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

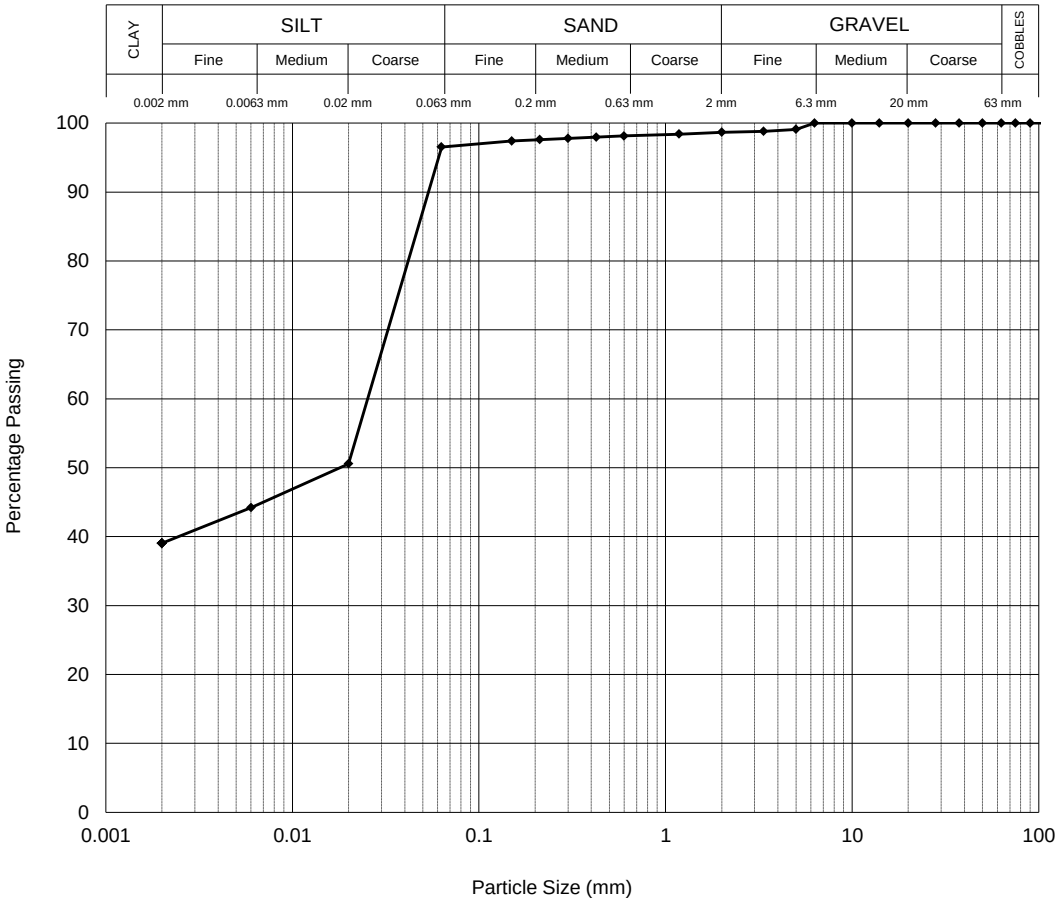
BH / TP No.	GT2
Sample Ref	F5-L3
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	51
6 µm	44
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	58
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

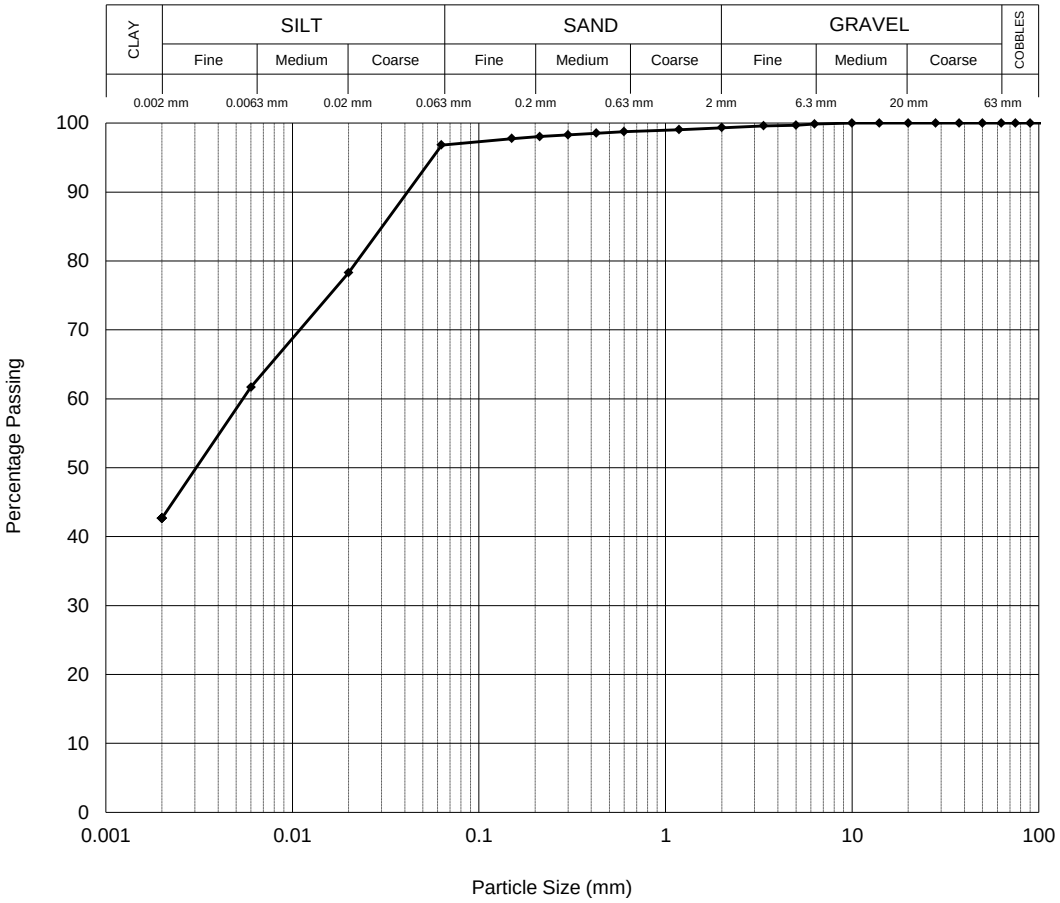
BH / TP No.	GT6
Sample Ref	F4-L4
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	62
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	54
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT11		F3L5	B	Dark grey silty CLAY	2.66	2
GT5		G2L5	B	Dark grey silty CLAY	2.70	2
GT6		G4L5	B	Dark grey clayey SILT	2.69	2
GT7		G5L4	B	Dark grey clayey SILT	2.72	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

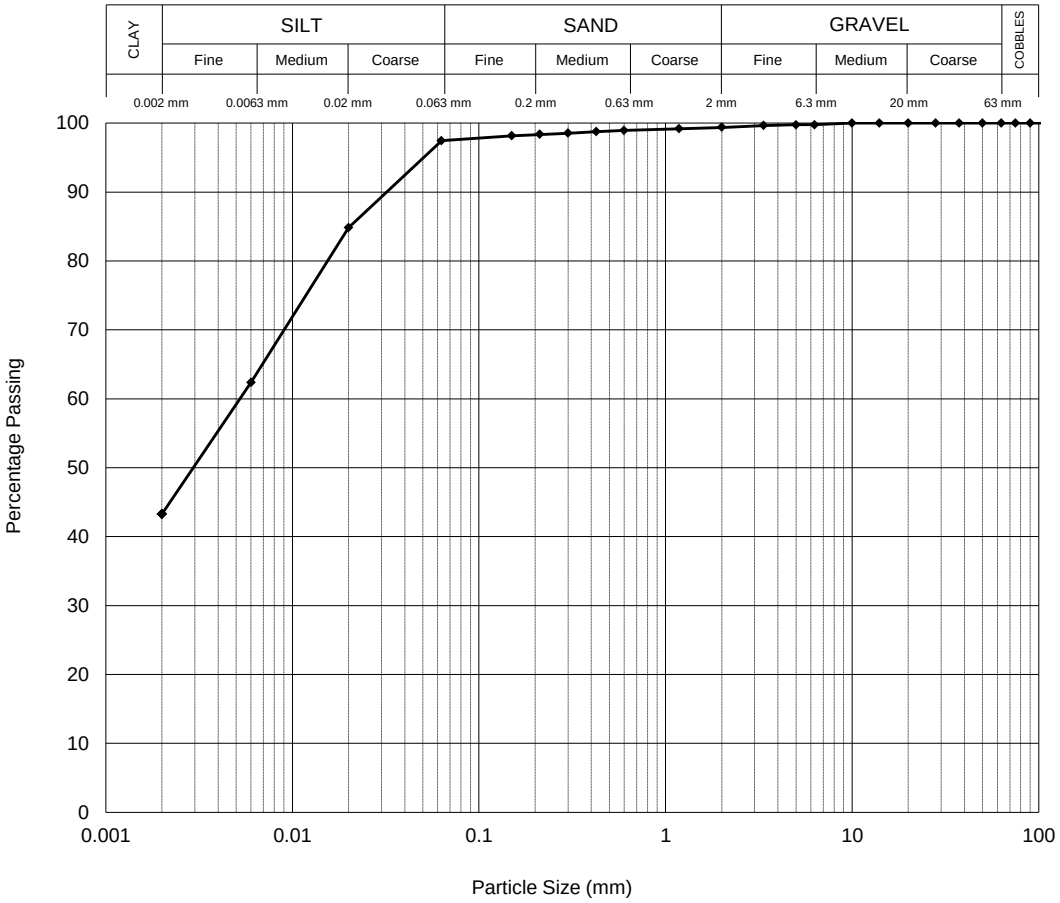
BH / TP No.	GT5
Sample Ref	G2L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	62
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	54
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

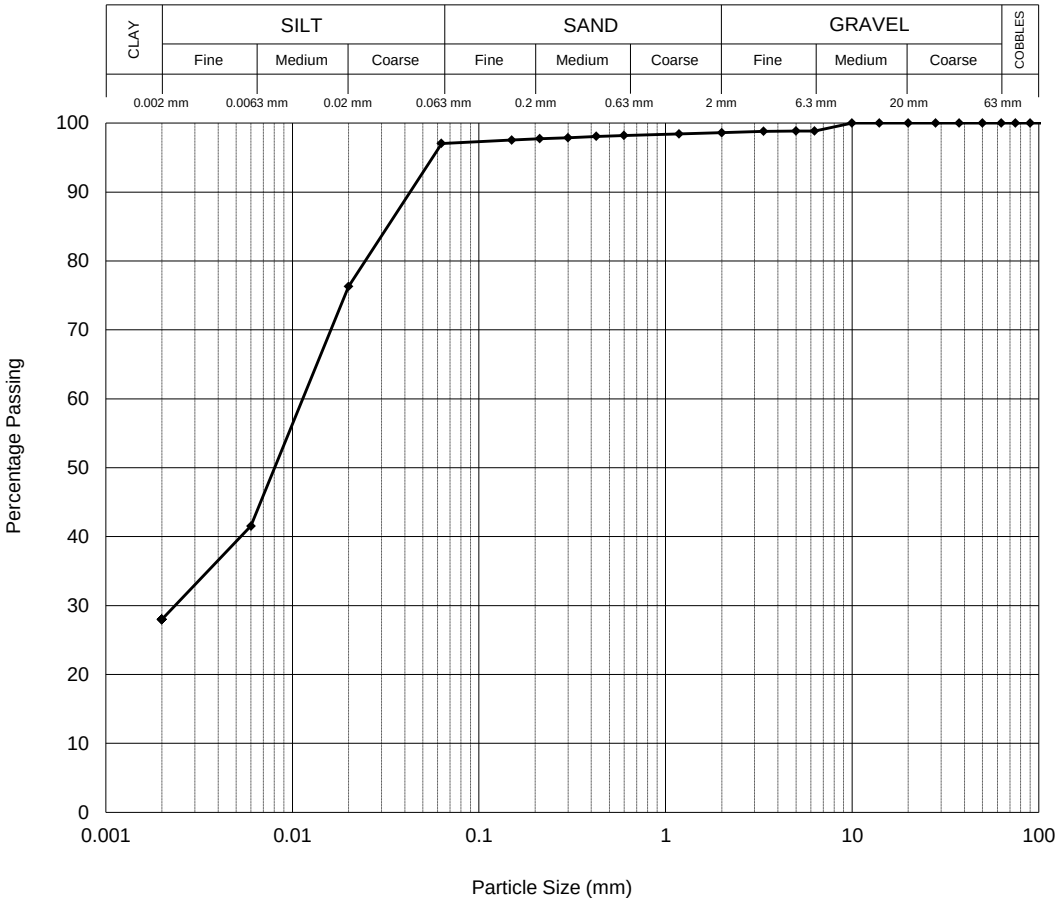
BH / TP No.	GT6
Sample Ref	G4L5
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	42
2 µm	28

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	69
Clay	28

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

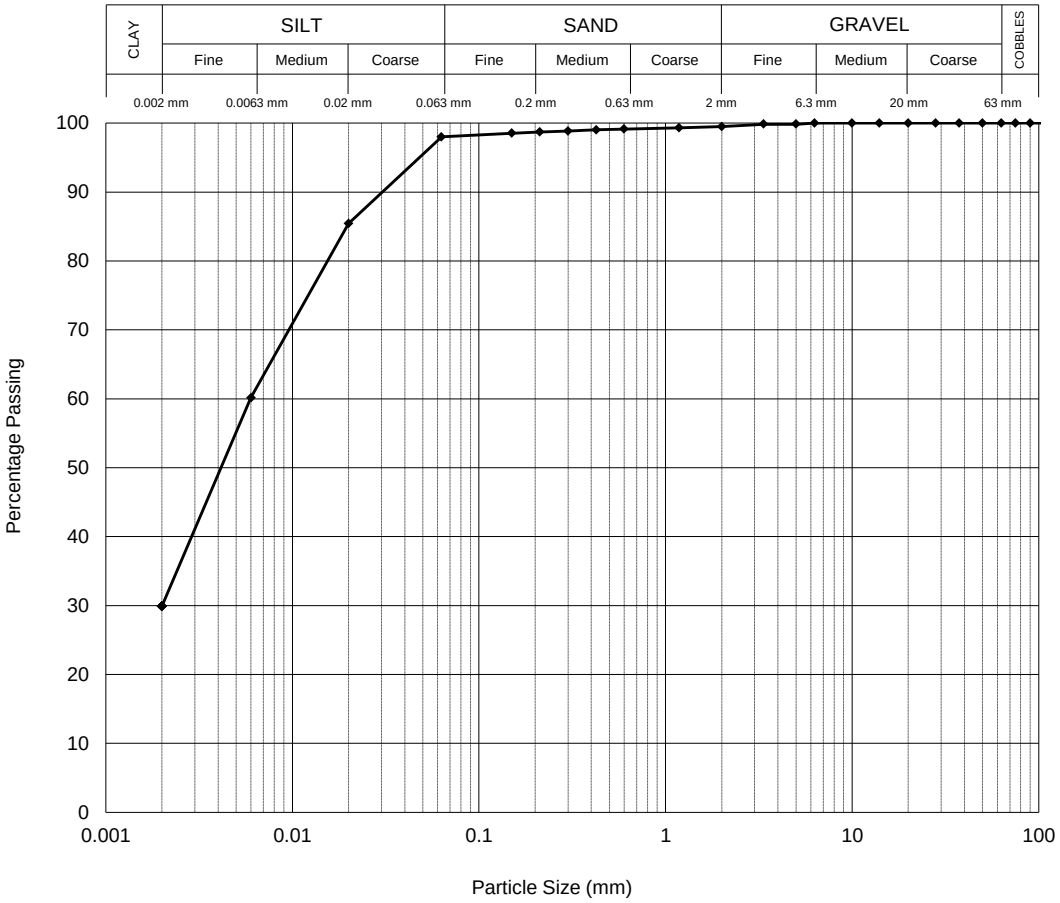
BH / TP No.	GT7
Sample Ref	G5L4
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	60
2 µm	30

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	68
Clay	30

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

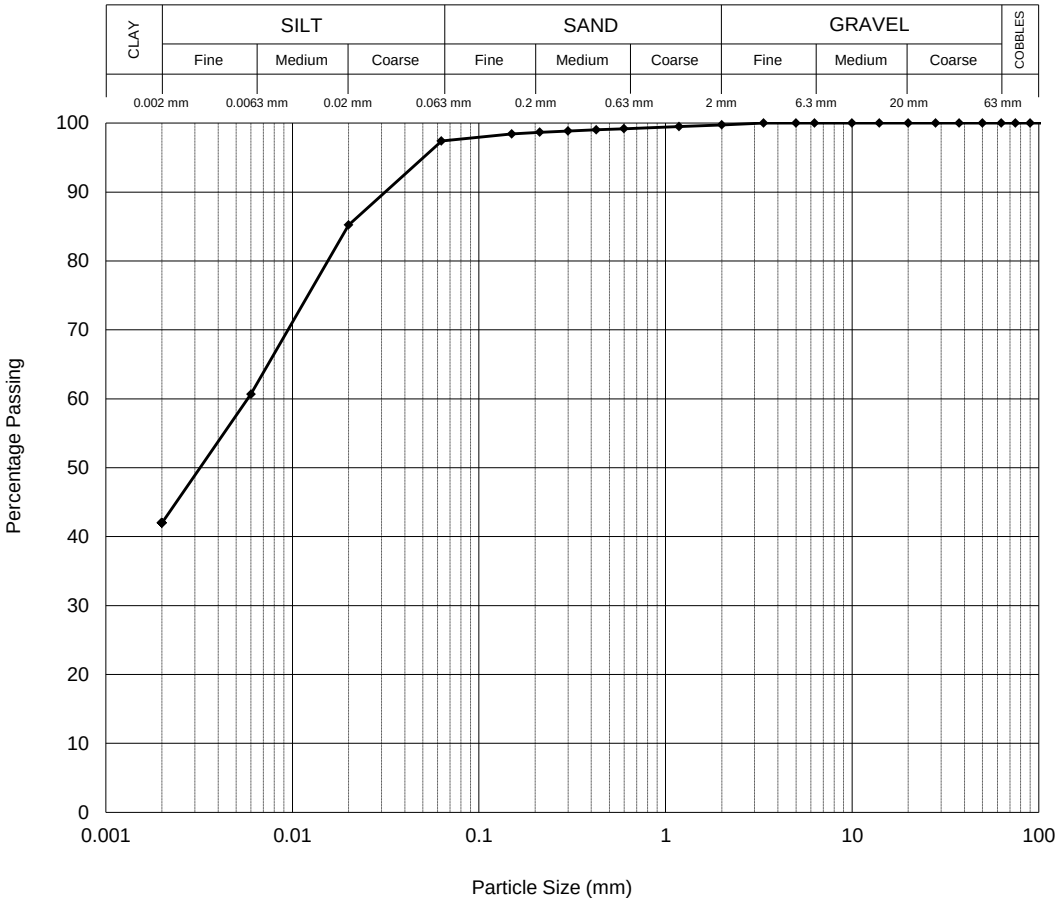
BH / TP No.	GT11
Sample Ref	F3L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	42
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	55
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F2L6	B	Dark grey silty CLAY	2.70	2
GT6		F3L6	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

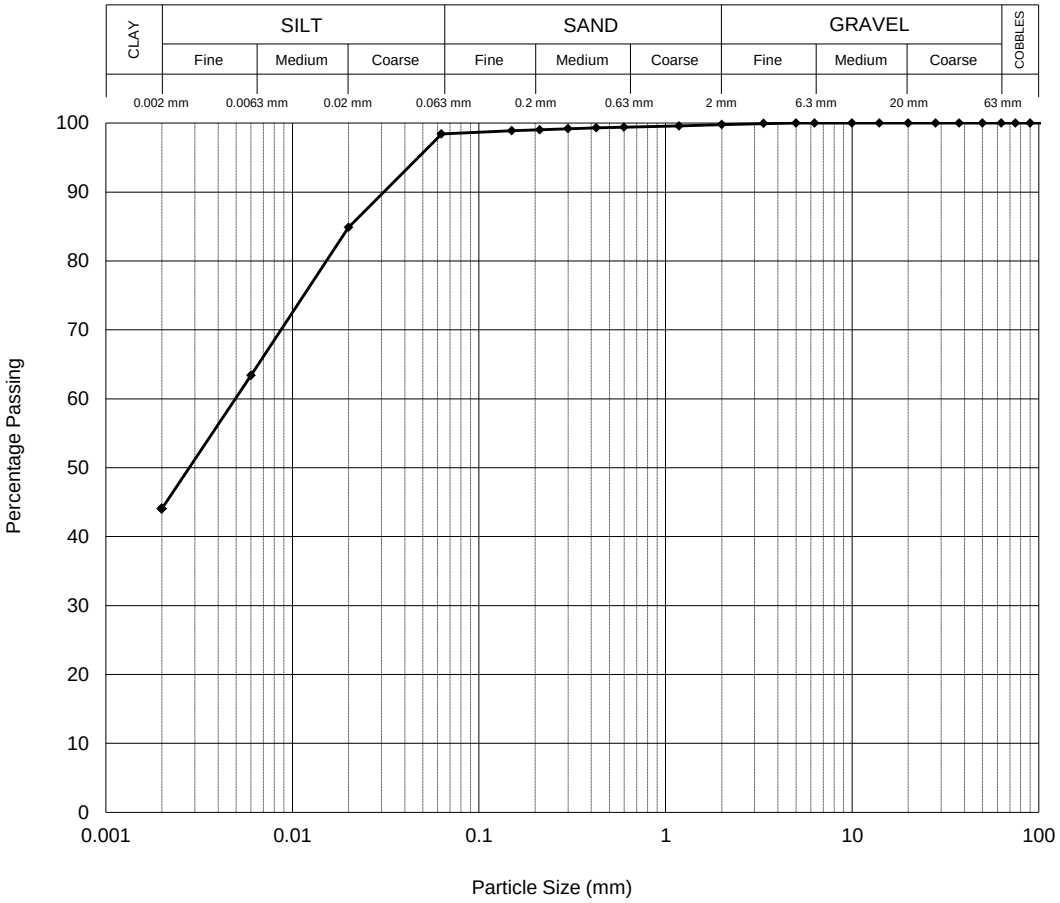
BH / TP No.	GT3
Sample Ref	F2L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	63
2 µm	44
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

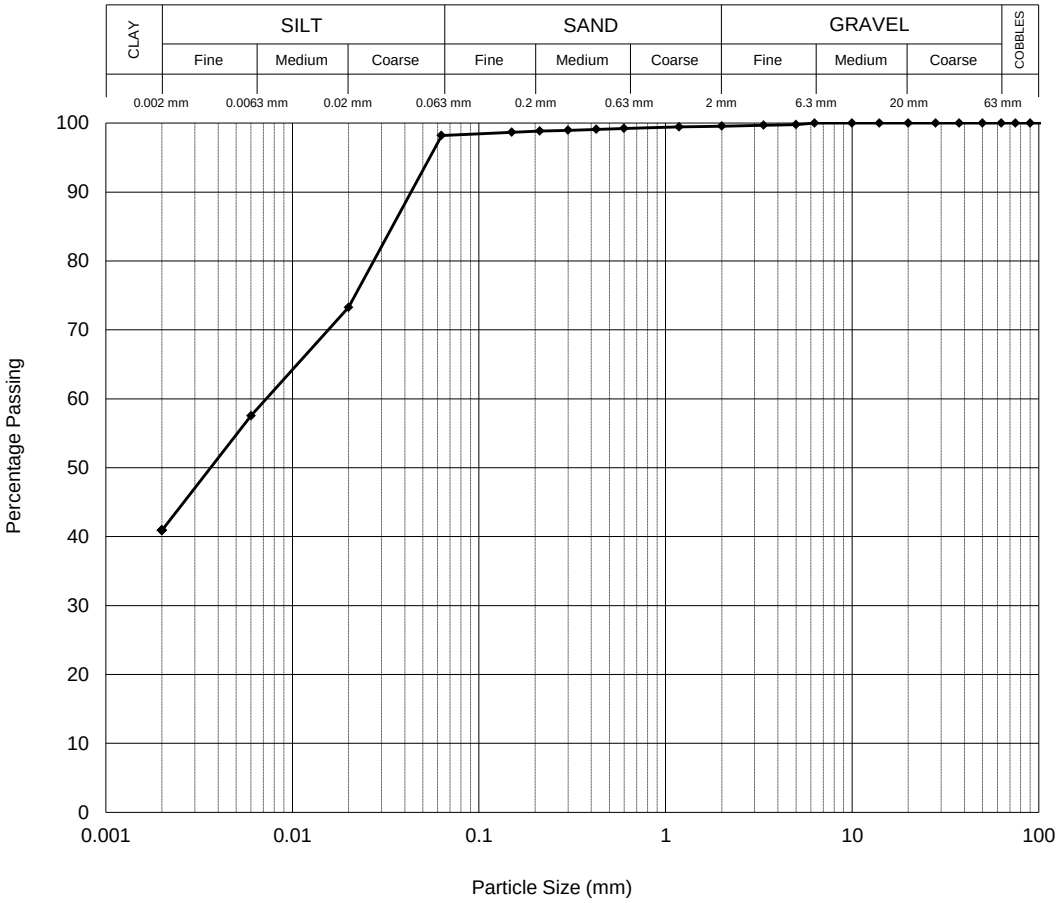
BH / TP No.	GT6
Sample Ref	F3L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	73
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	57
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m^3		%	%	%	%	%	Mg/m^3	
B2 L2	1	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	49	22	27		
C1 L1	2	0.00		B	Dark grey slightly sandy silty CLAY			22.0	100	48	22	26		
C4 L-1	1	0.00		B	Dark grey slightly sandy silty CLAY			20.3	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

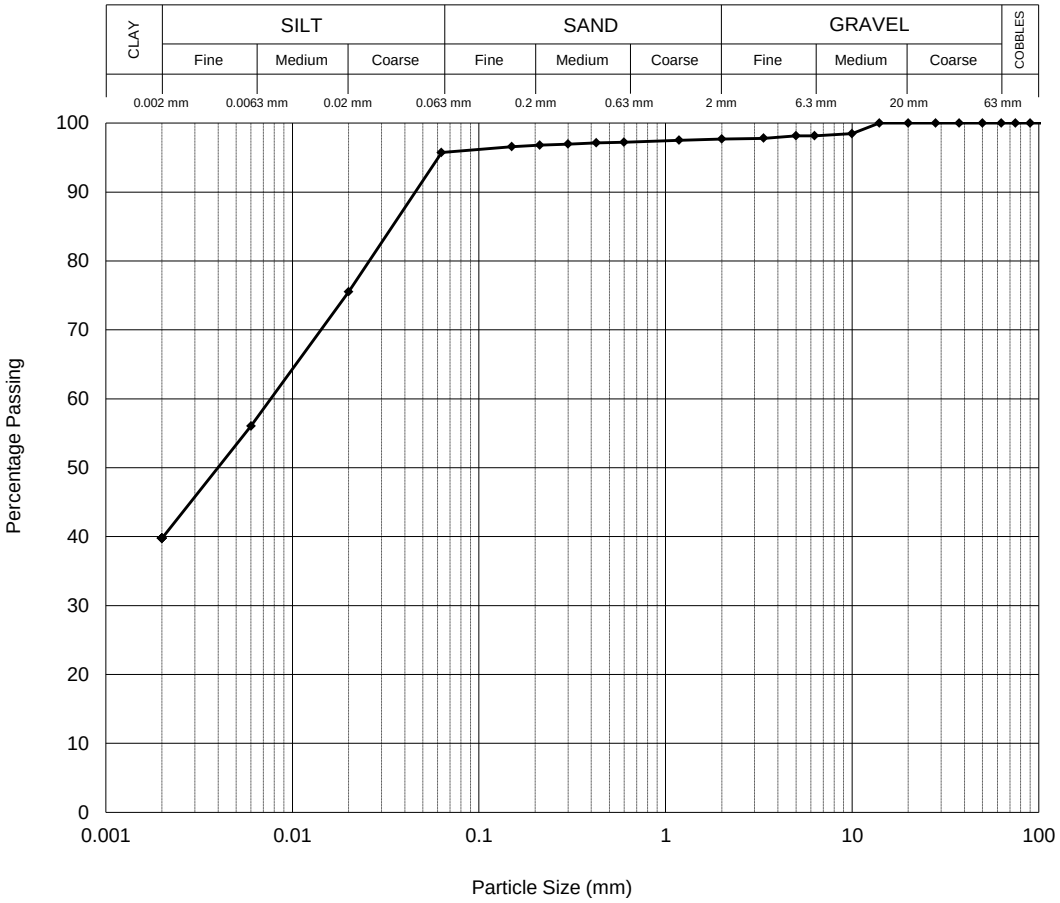
BH / TP No.	C1L1-B1-GT5
Sample Ref	GT5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	98
1.18 mm	98
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	56
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	2
Sand	2
Silt	56
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

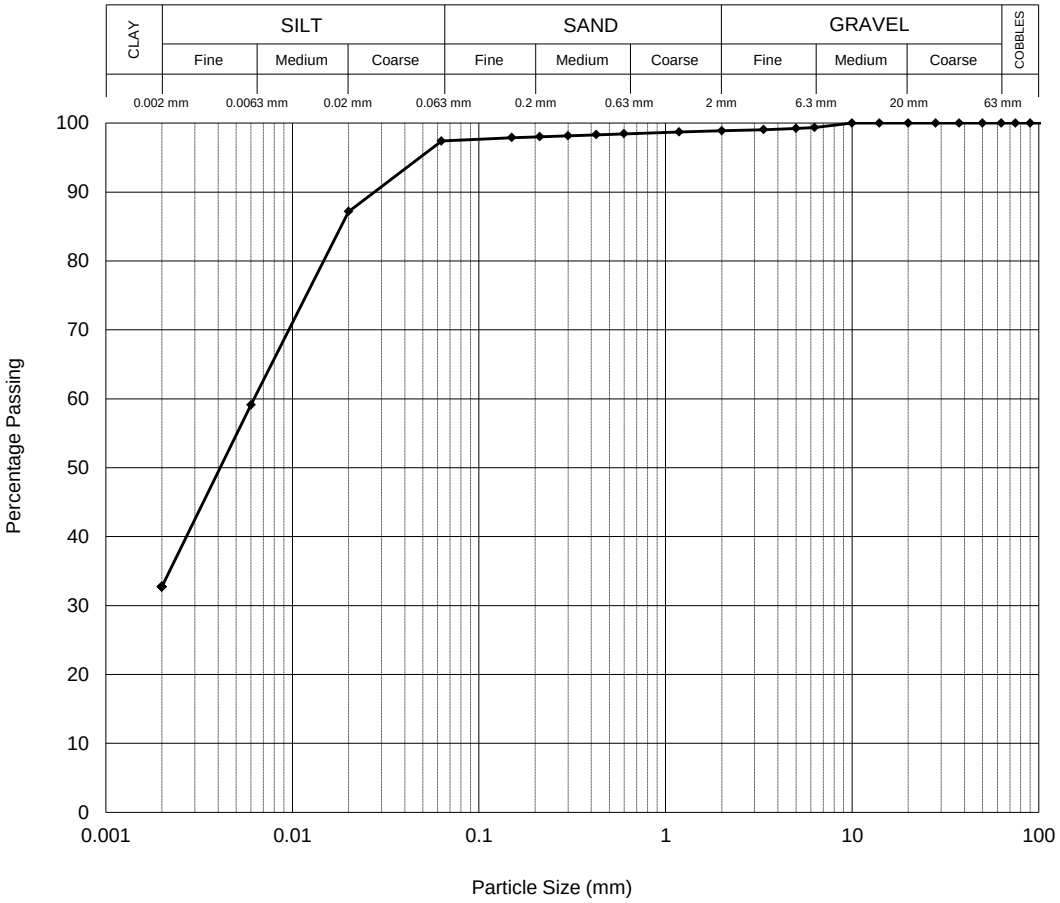
BH / TP No.	C4I-1-B2-GT14
Sample Ref	GT14
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	59
2 µm	33

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	65
Clay	33

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF

(Ref 1530879043)

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
B2 L2	2	0.00		B	Dark grey slightly sandy silty CLAY			27.0	100	49	21	28		
D1 L2A	1	0.00		B	Dark grey slightly sandy silty CLAY			25.3	100	48	22	26		
D2 L2	2	0.00		B	Dark grey slightly sandy silty CLAY			22.0	100	49	23	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
C2L2-B-GT3					B	Dark grey silty CLAY	2.70	2
D2L2-B1-GT4					B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
10/07/2018

Project Number:

GEO / 27650

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

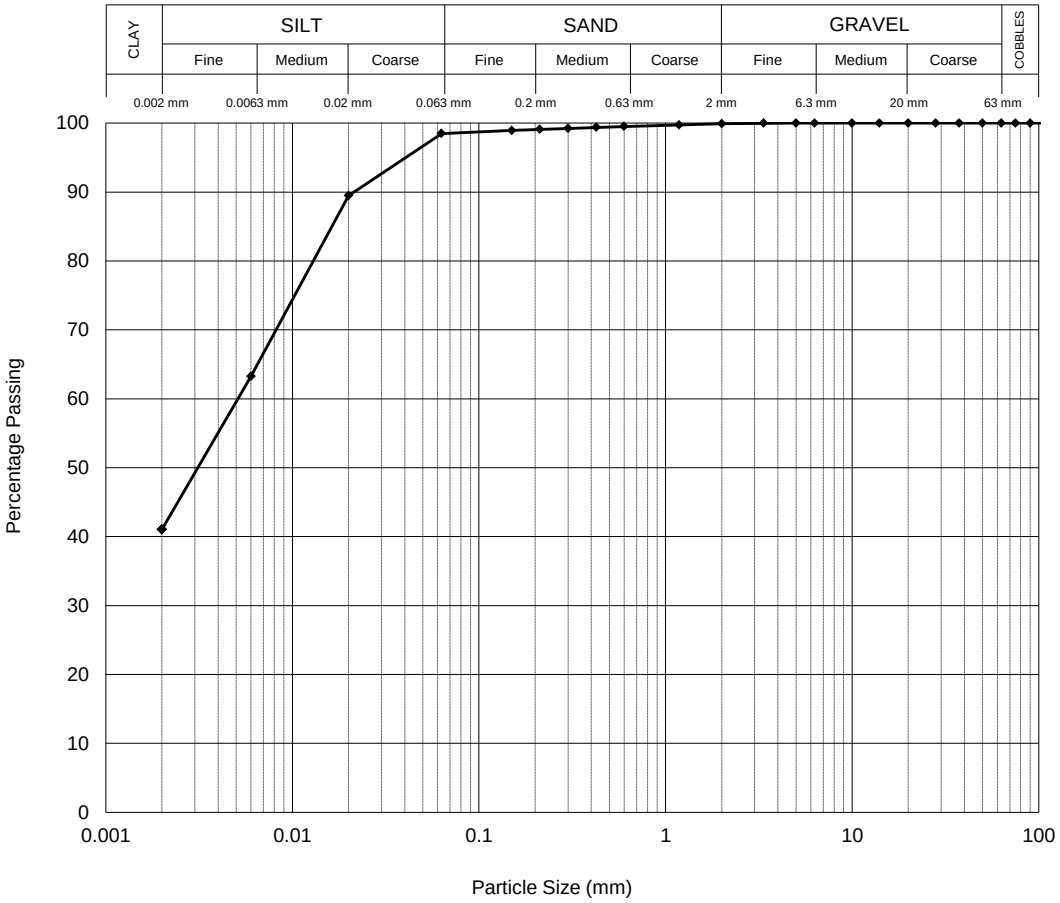
BH / TP No.	C2L2-B-GT3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	63
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	57
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27650

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

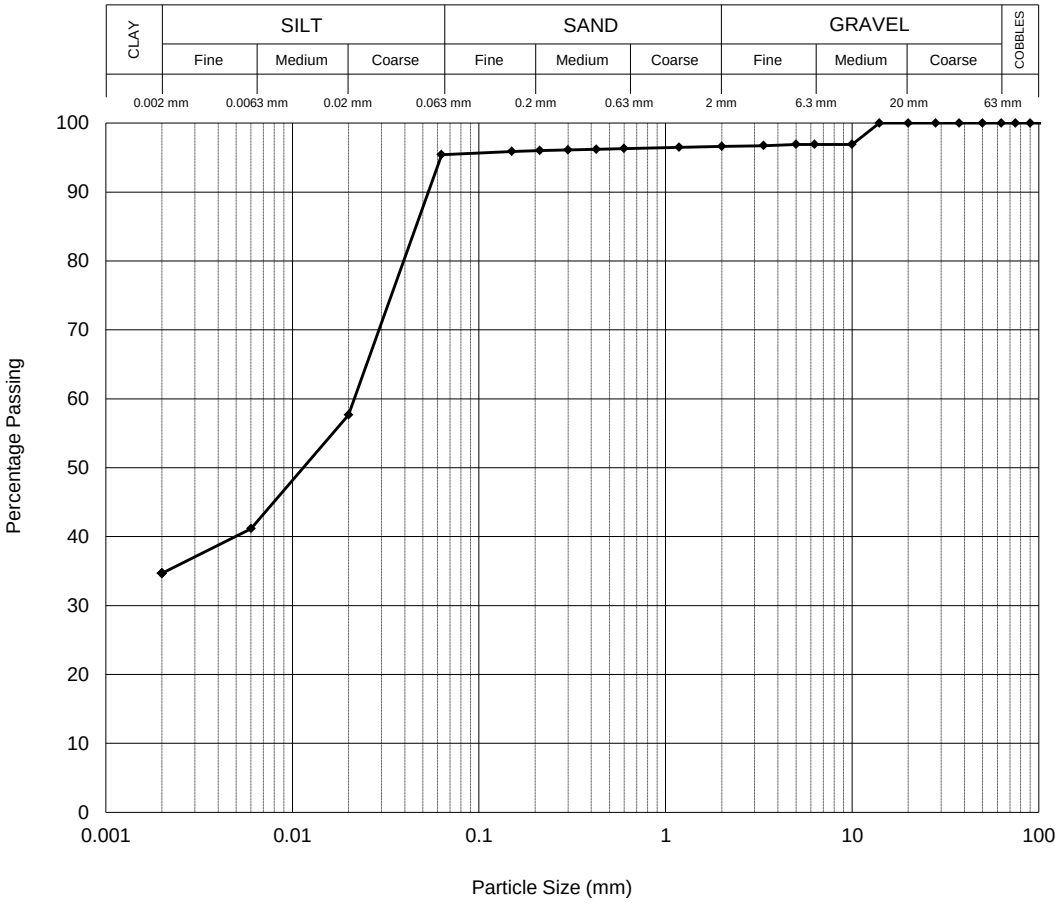
BH / TP No.	D2L2-B1-GT4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	97
6.30 mm	97
5.00 mm	97
3.35 mm	97
2.00 mm	97
1.18 mm	96
600 µm	96
425 µm	96
300 µm	96
212 µm	96
150 µm	96
63 µm	95



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	58
6 µm	41
2 µm	35

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	3
Sand	1
Silt	61
Clay	35

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27650

Project Name:

DOCKSWAY CELL 4
AG0390

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
B2 L3	4	0.00		B	Dark grey slightly sandy silty CLAY			20.0	100	47	21	26		
C1 L2	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	22	25		
C4 L-2	1	0.00		B	Dark grey slightly sandy silty CLAY			19.2	100	47	21	26		
D1 L2	2	0.00		B	Dark grey slightly sandy silty CLAY			23.2	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
C2 L3	1	0.00		B	Dark grey slightly sandy silty CLAY			21.4	100	46	22	24		
D1 L3	4	0.00		B	Dark grey slightly sandy silty CLAY			21.3	100	47	22	25		
D2 L3	3	0.00		B	Dark grey slightly sandy silty CLAY			21.0	100	43	22	21		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
B2 L4	2	0.00		B	Dark grey slightly sandy silty CLAY			20.8	100	45	20	25		
C1 L3	1	0.00		B	Dark grey slightly sandy silty CLAY			18.9	100	48	21	27		
C4 L-3	4	0.00		B	Dark grey slightly sandy silty CLAY			20.5	100	45	19	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
C2 L4	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	20	27		
D1 L4	4	0.00		B	Dark grey slightly sandy silty CLAY			20.6	100	48	20	28		
D2 L4	1	0.00		B	Dark grey slightly sandy silty CLAY			20.5	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m^3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
B2 L5	1	0.00		B	Dark grey slightly sandy silty CLAY			20.1	100	48	19	29		
C1 L4	4	0.00		B	Dark grey slightly sandy silty CLAY			21.0	100	50	21	29		
C2 L5	2	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	49	22	27		
D2 L5	5	0.00		B	Dark grey slightly sandy silty CLAY			20.6	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13048

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	28	Jun-18
Date of receipt of testing instructions	28	Jun-18
Date testing started:	29	Jun-18
Date of issue:	17	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m^3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
B2 L5	1	0.00		B	Dark grey slightly sandy silty CLAY			20.1	100	48	19	29		
C1 L4	4	0.00		B	Dark grey slightly sandy silty CLAY			21.0	100	50	21	29		
C2 L5	2	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	49	22	27		
D2 L5	5	0.00		B	Dark grey slightly sandy silty CLAY			20.6	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		C2-L5			B	Dark grey silty CLAY.	2.71	2
GT6		D2-L5			B	Dark grey silty CLAY	2.72	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27702

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

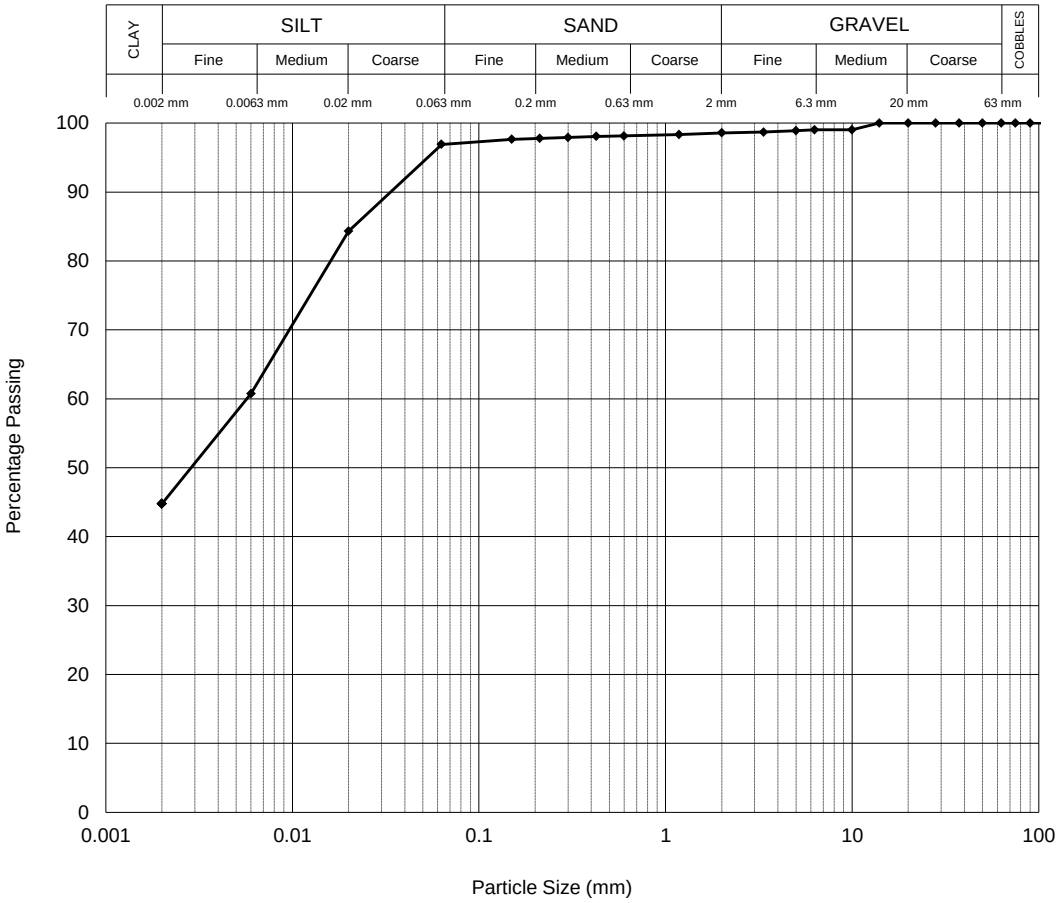
BH / TP No.	GT3
Sample Ref	C2-L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	99
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	61
2 µm	45
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	52
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27702

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

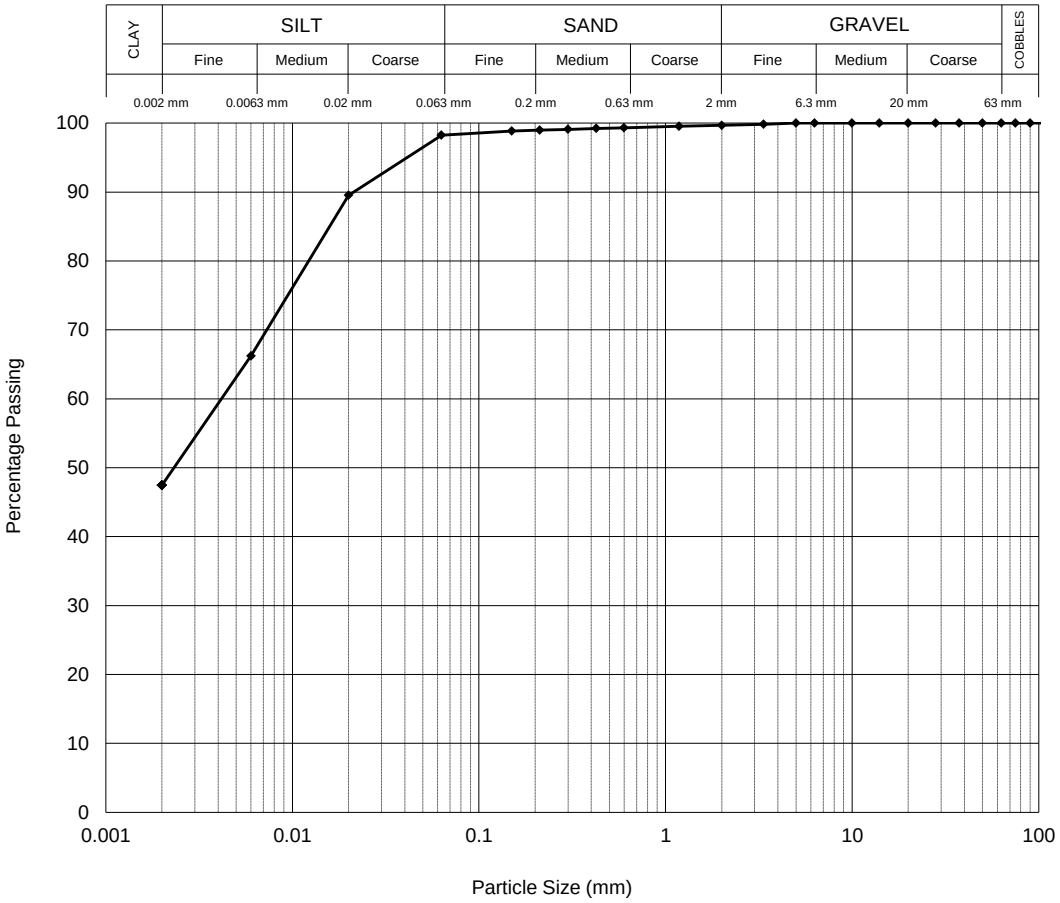
BH / TP No.	GT6
Sample Ref	D2-L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	90
6 µm	66
2 µm	47

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	51
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27702

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13051

Number of samples submitted for testing:	8	sample (s)
Natural Moisture Content	6	test(s)
Atterberg Limit	6	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	29	Jun-18
Date of receipt of testing instructions	29	Jun-18
Date testing started:	2	Jul-18
Date of issue:	5	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C1 L5	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	47	20	27		
C4 L-4	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	47	20	27		
D1 L5	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	20	27		
E1 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	49	21	28		
F1 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	48	20	28		
G1 L1	GT8	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT4		F1L1	B	Dark grey silty CLAY	2.67	2
GT6		D1L5	B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
02/08/2018

Project Number:

GEO / 27736

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

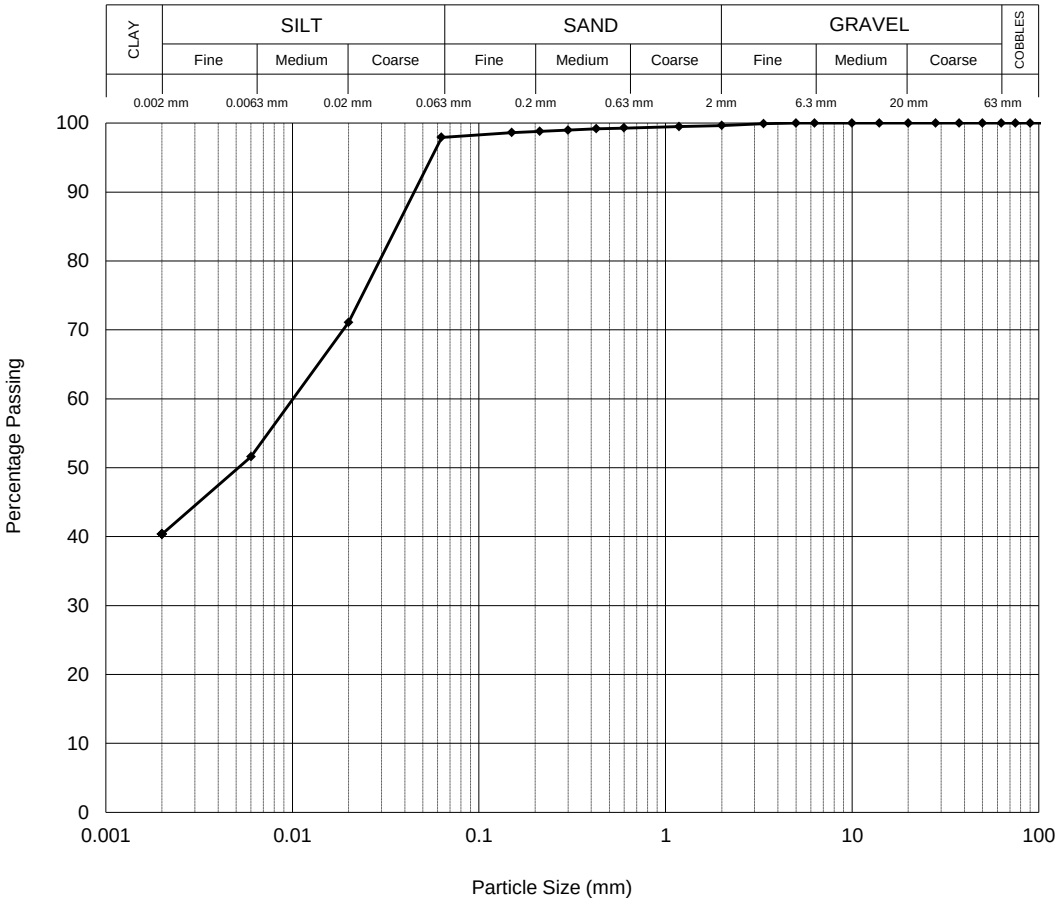
BH / TP No.	GT4
Sample Ref	F1L1
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	71
6 µm	52
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	58
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
02/08/2018

Project Number:

GEO / 27736

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

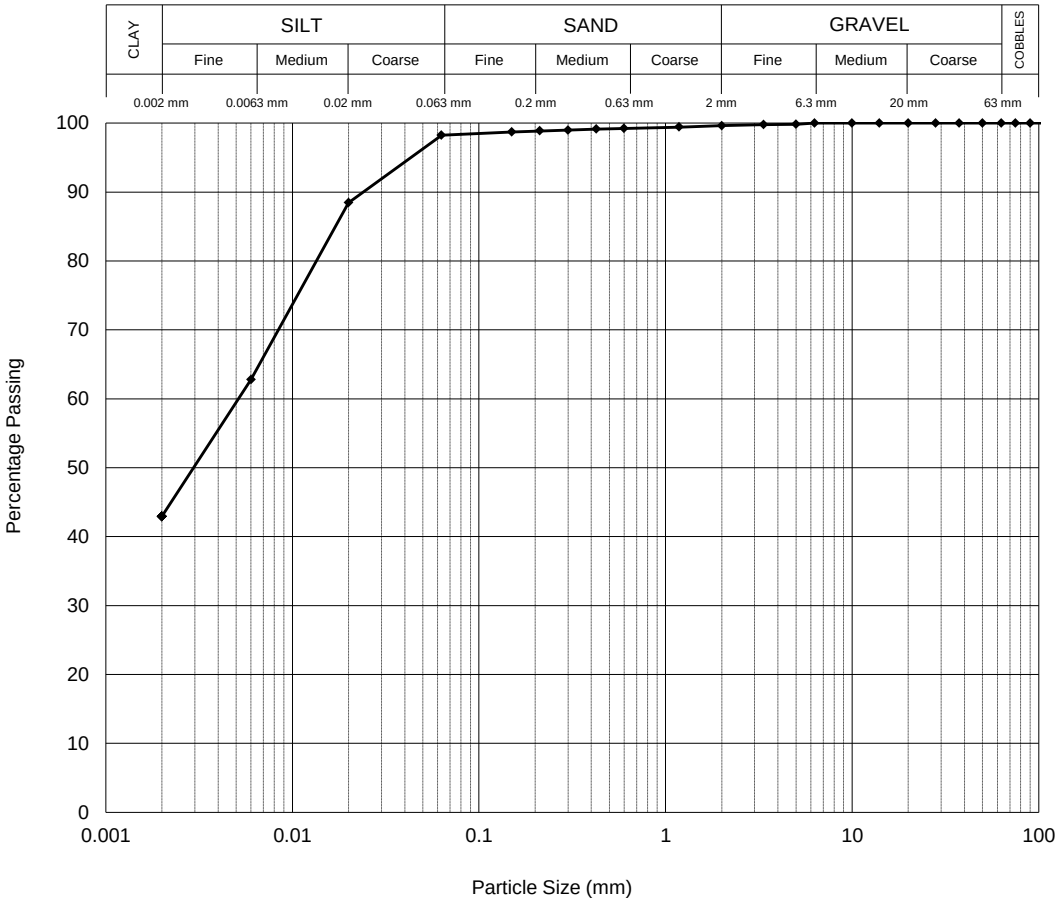
BH / TP No.	GT6
Sample Ref	D1L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	63
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
02/08/2018

Project Number:

GEO / 27736

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13055

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	2	Jul-18
Date of receipt of testing instructions	2	Jul-18
Date testing started:	4	Jul-18
Date of issue:	9	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
B2 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY				100	50	21	29		
C2 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY				100	48	20	28		
D2 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY				100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		C2L6	B	Dark grey slightly micaceous SILT and CLAY with rare fossil fragments.	2.69	2
GT5		D2L6	B	Dark grey SILT and CLAY with rare fossil fragments.	2.70	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27738

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1532705134)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

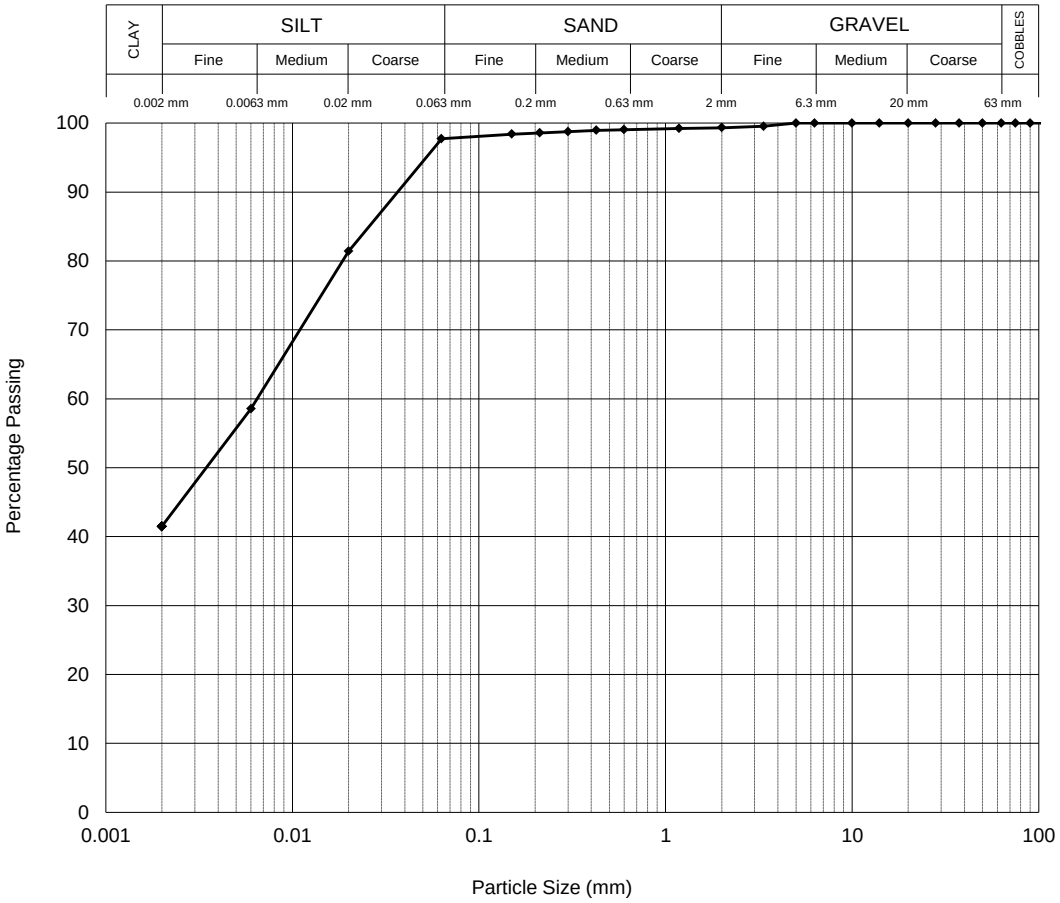
BH / TP No.	GT3
Sample Ref	C2L6
Sample Type	B

Description

Dark grey slightly micaceous SILT and CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	59
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27738

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

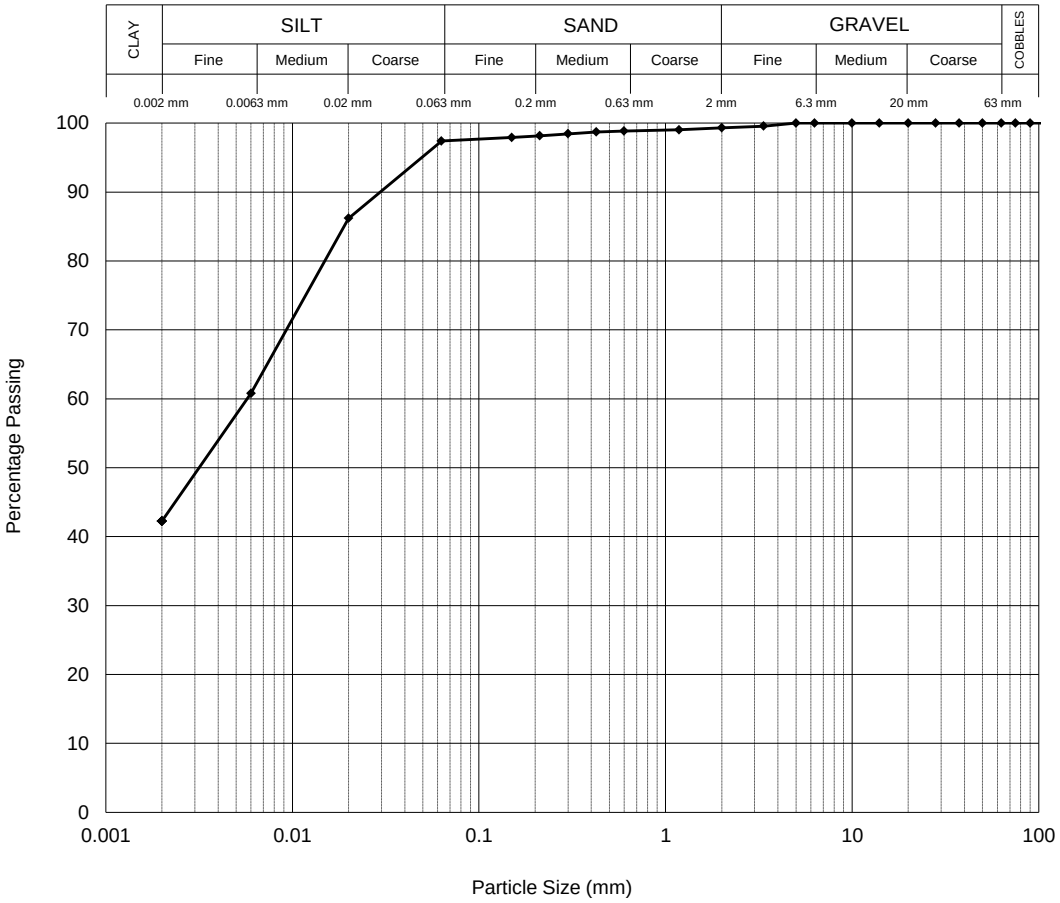
BH / TP No.	GT5
Sample Ref	D2L6
Sample Type	B

Description

Dark grey SILT and CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	61
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27738

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13058

Number of samples submitted for testing:	7	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	3	Jul-18
Date of receipt of testing instructions	3	Jul-18
Date testing started:	4	Jul-18
Date of issue:	9	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-5	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.9	100	49	21	28		
F2 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	46	21	25		
G2 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	47	20	27		
G3 L1	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	45	20	25		
G4 L1	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	49	20	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT6		F2L1	B	Dark grey SILT and CLAY with rare fossil and brick fragments.	2.72	2
GT7		G4L1	B	Dark grey clayey SILT with rare fossil and brick fragments.	2.66	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27739

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

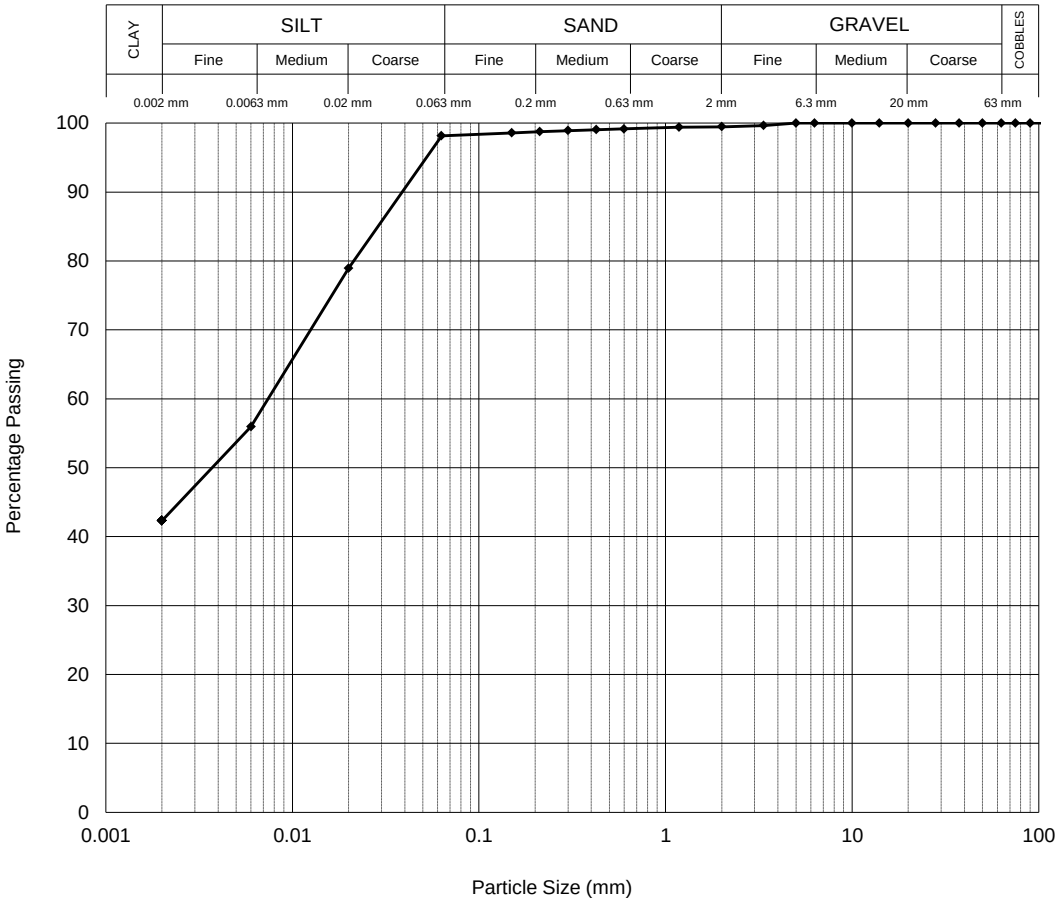
BH / TP No.	GT6
Sample Ref	F2L1
Sample Type	B

Description

Dark grey SILT and CLAY with rare fossil and brick fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	79
6 µm	56
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27739

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

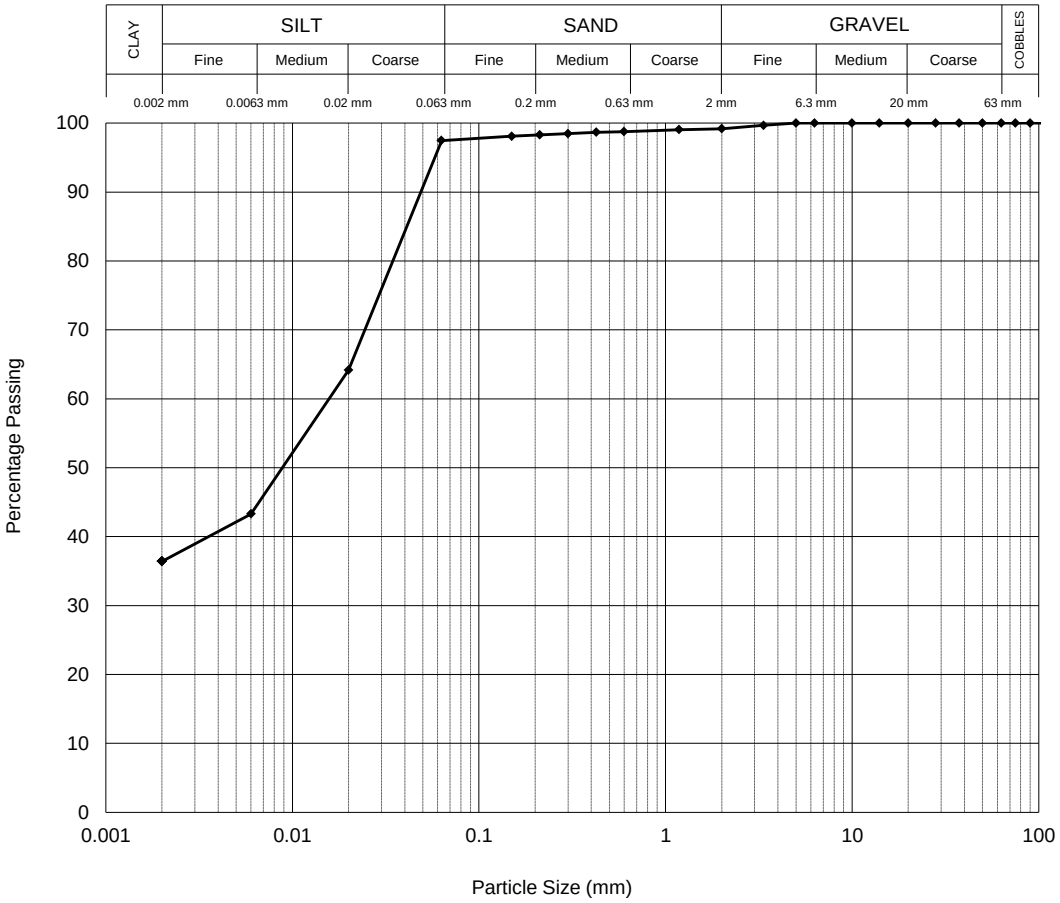
BH / TP No.	GT7
Sample Ref	G4L1
Sample Type	B

Description

Dark grey clayey SILT with rare fossil and brick fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	64
6 µm	43
2 µm	36
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	61
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
27/07/2018

Project Number:

GEO / 27739

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13064

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	5	Jul-18
Date of receipt of testing instructions	5	Jul-18
Date testing started:	6	Jul-18
Date of issue:	5	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
G2 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.0	100	49	23	26		
G3 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.8	97	50	20	30		
G4 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	51	21	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		G2L2		Dark grey silty CLAY with rare fossil fragments.	2.70	2
GT5		G4L2		Dark grey CLAY and SILT with rare fossil fragments.	2.69	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27765

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

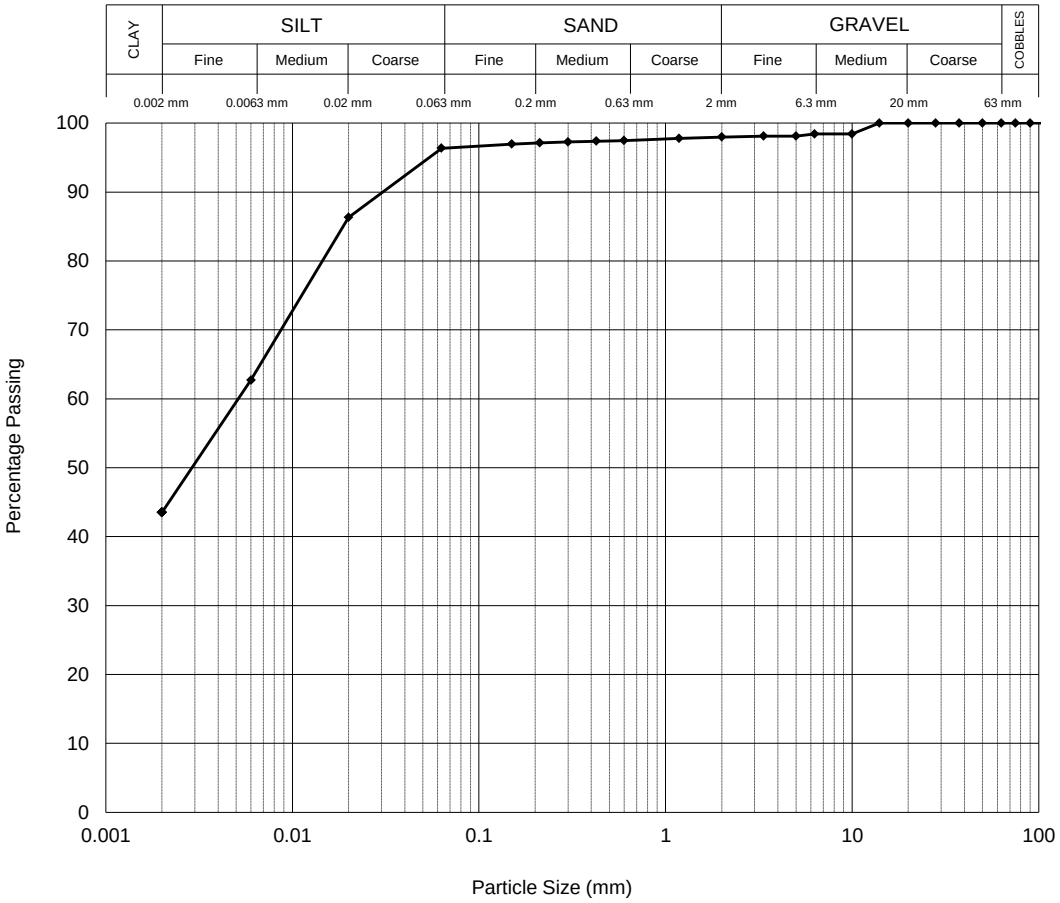
BH / TP No.	GT3
Sample Ref	G2L2

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	98
1.18 mm	98
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	2
Sand	2
Silt	53
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27765

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

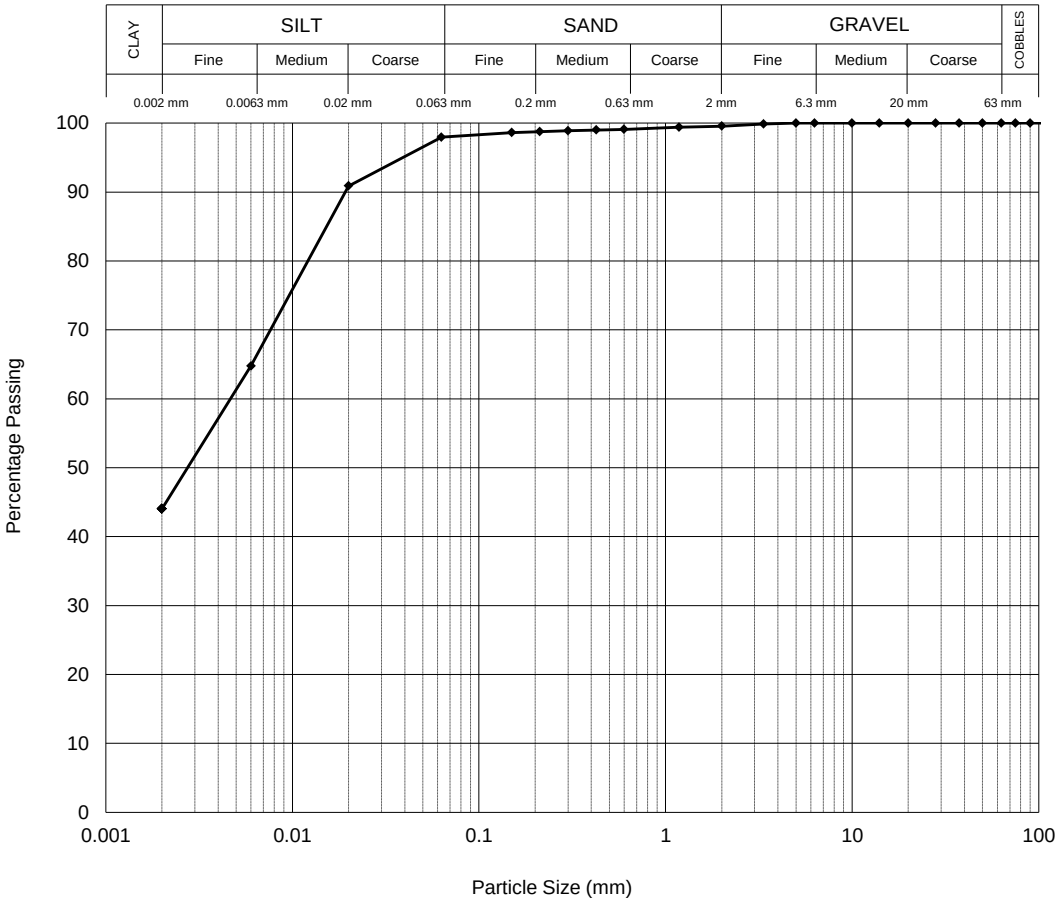
BH / TP No.	GT5
Sample Ref	G4L2

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	91
6 µm	65
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27765

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-8	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.1	100	48	19	29		
E2 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			26.0	100	49	21	28		
F5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.4	100	49	21	28		
G5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.2	100	51	21	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13072

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	9	Jul-18
Date of receipt of testing instructions	9	Jul-18
Date testing started:	10	Jul-18
Date of issue:	10	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-8	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.1	100	48	19	29		
E2 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			26.0	100	49	21	28		
F5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.4	100	49	21	28		
G5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.2	100	51	21	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT6		C4L-8		Dark grey silty CLAY with rare fossil fragments.	2.69	2
GT4		G5L1		Dark grey silty CLAY with rare fossil fragments.	2.74	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27762

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

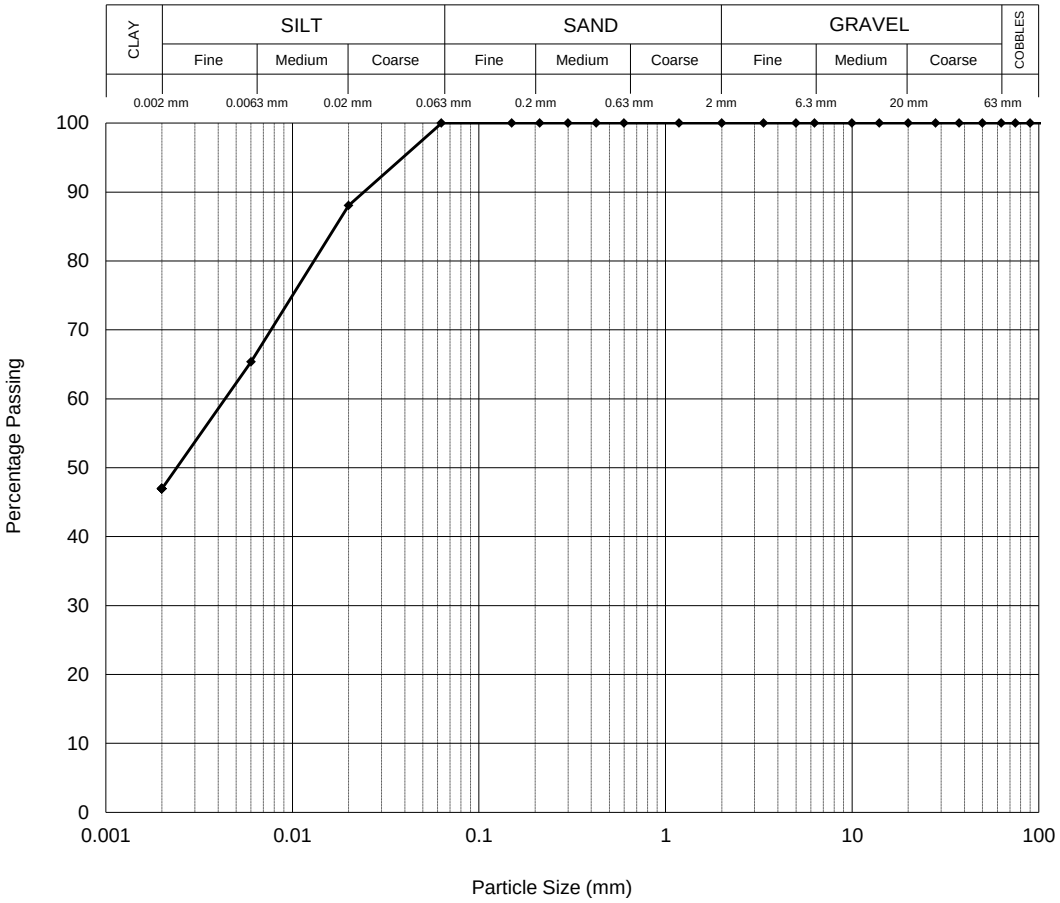
BH / TP No.	GT4
Sample Ref	G5L1

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	100
212 µm	100
150 µm	100
63 µm	100



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	65
2 µm	47

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	0
Silt	53
Clay	47

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27762

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

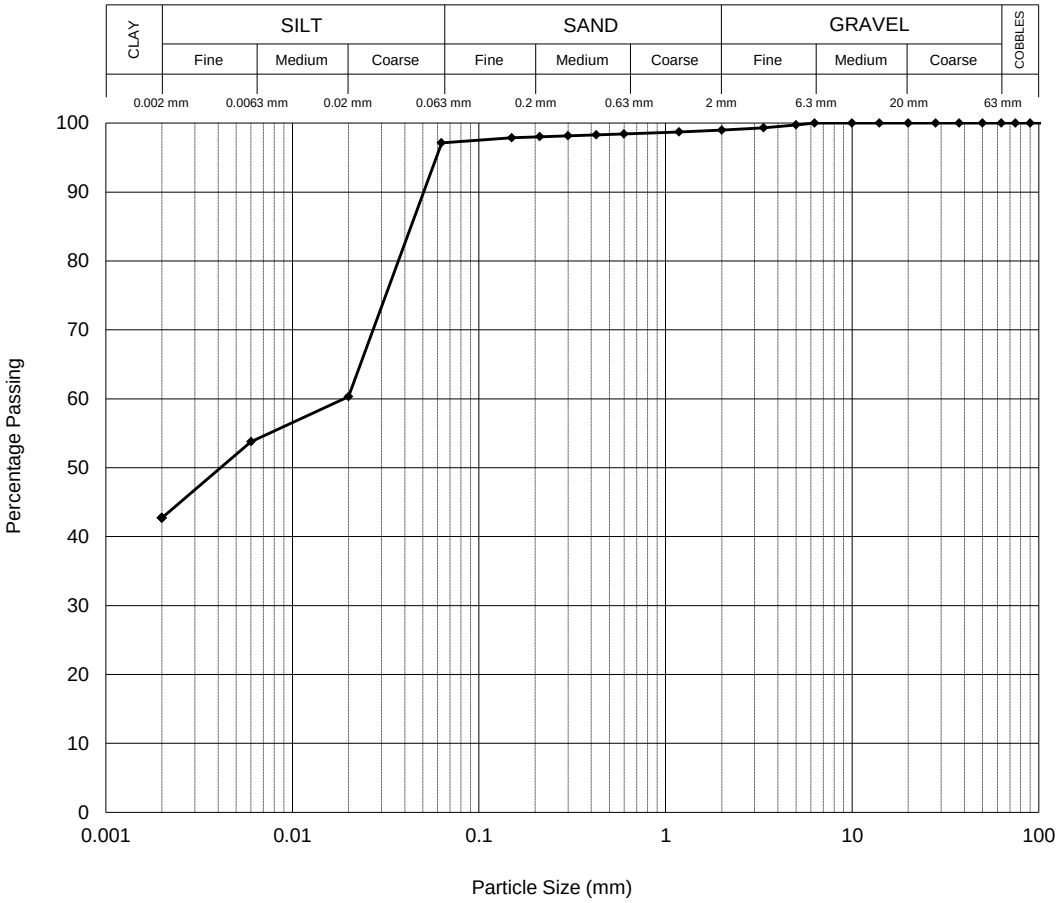
BH / TP No.	GT6
Sample Ref	C4L-8

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	60
6 µm	54
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	54
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27762

Project Name:

DOCKSWAY CELL 4
AG0390

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-9	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.6	100	48	20	28		
E3 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	47	21	26		
E4 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	50	21	29		
E5 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.3	100	47	21	26		
F1 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT5		D4 L-9		Dark grey CLAY and SILT with rare fossil fragments.	2.70	2
GT7		F1L3		Dark grey CLAY and SILT with rare fossil fragments.	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

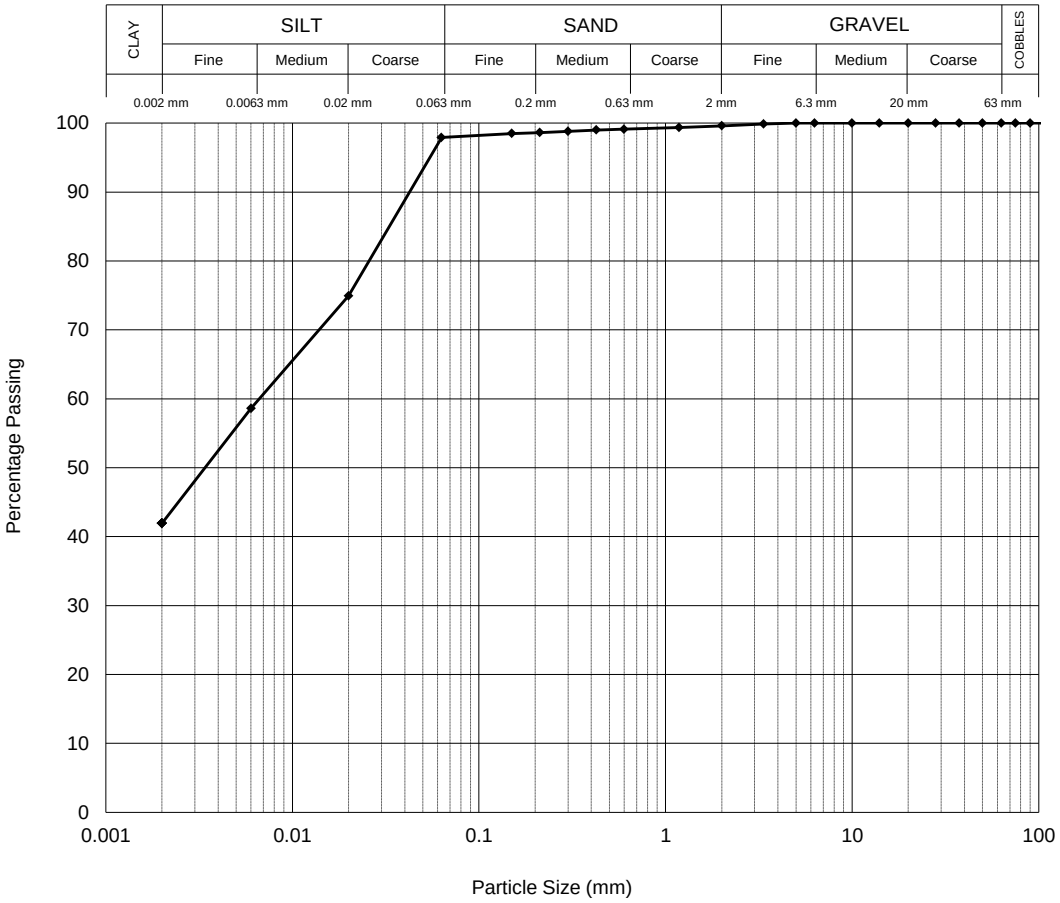
BH / TP No.	GT5
Sample Ref	D4 L-9

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	75
6 µm	59
2 µm	42
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

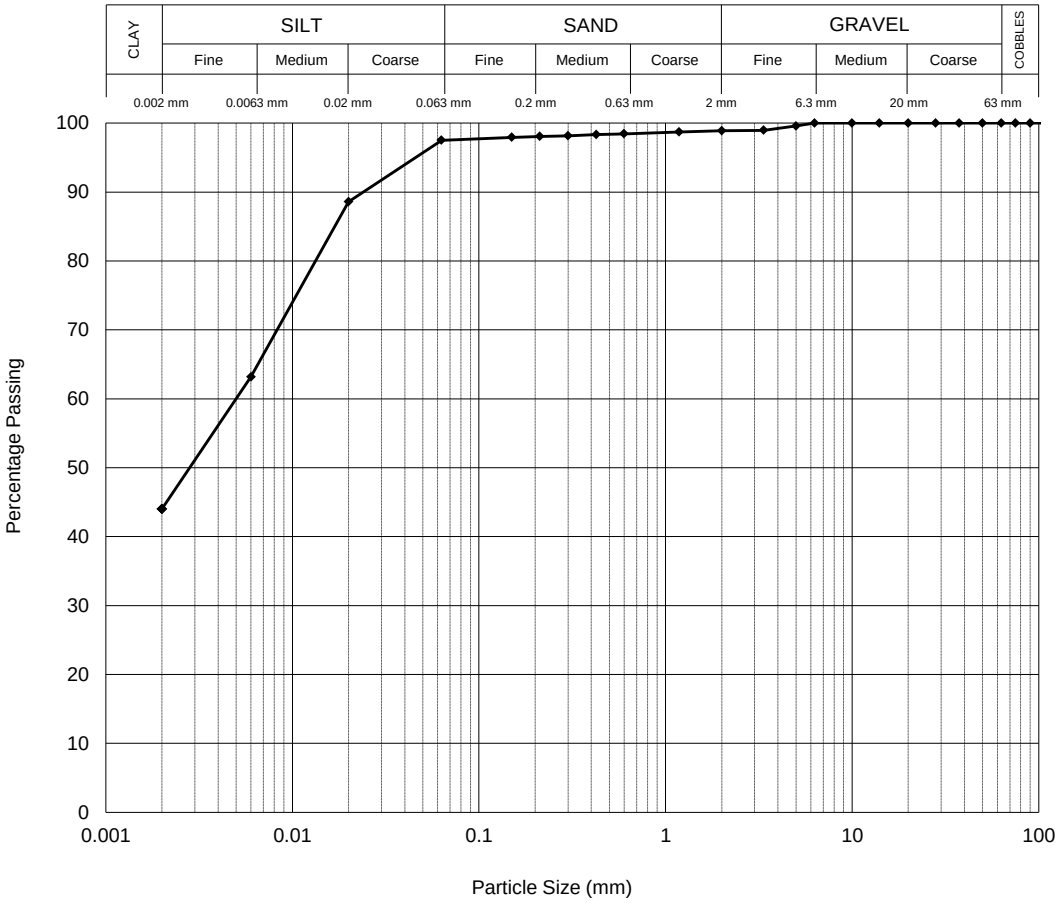
BH / TP No.	GT7
Sample Ref	F1L3

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	63
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

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BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	D4 L-9
Sample Type:	C

Description:
Firm dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.53	99.43
Height	*mm*	100.95	100.85
Moisture Content	*%*	26	27
Bulk Density	*Mg/m³*	1.98	2.00
Dry Density	*Mg/m³*	1.58	1.58

SATURATION STAGE

Saturation initially by constant moisture content.

Pore pressure coefficient ('B' value)		1.00	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	2.4

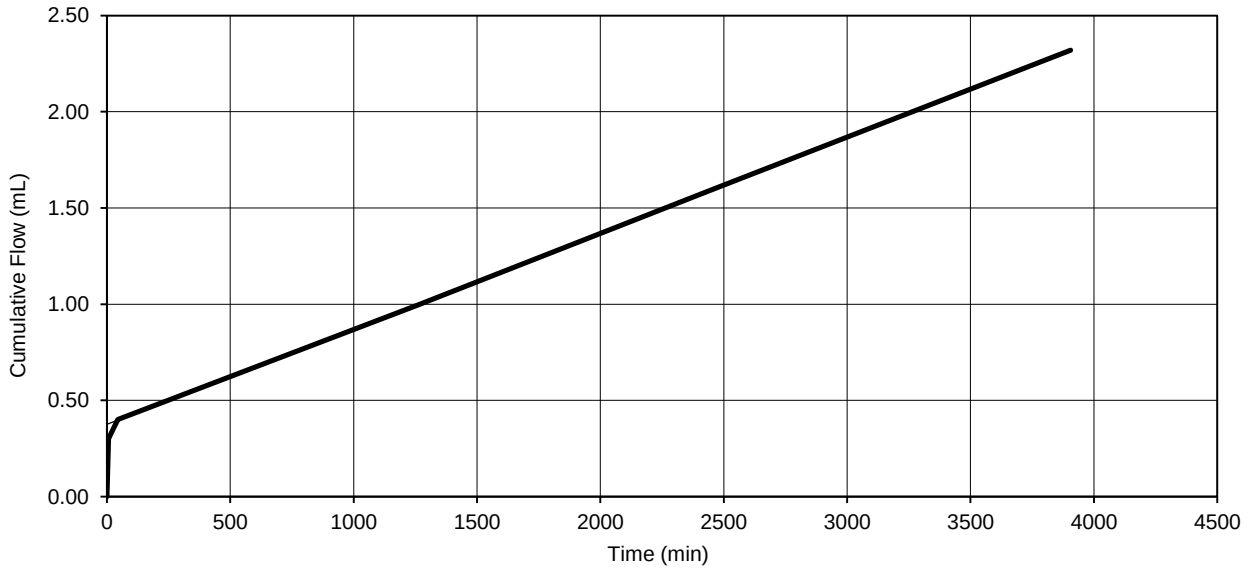
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 1.1×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-10	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	22	30		
E1 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			29.2	100	50	20	30		
E3 L2	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	50	22	28		
G2 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	52	21	31		
G3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13081

cjassociates

Number of samples submitted for testing:	8	sample (s)

Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	3	test(s)
Grading	3	test(s)

Date (s) sampled and received at laboratory:	11	Jul-18
Date of receipt of testing instructions	11	Jul-18
Date testing started:	12	Jul-18
Date of issue:	10	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
K Maid
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-10	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	22	30		
E1 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			29.2	100	50	20	30		
E3 L2	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	50	22	28		
G2 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	52	21	31		
G3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		G3L3		Dark grey silty CLAY with rare fossil fragments.	2.70	2
GT5		D4L-10		Dark grey silty CLAY with rare rootlets.	2.69	2
GT8		E3L2		Dark grey silty CLAY.	2.76	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

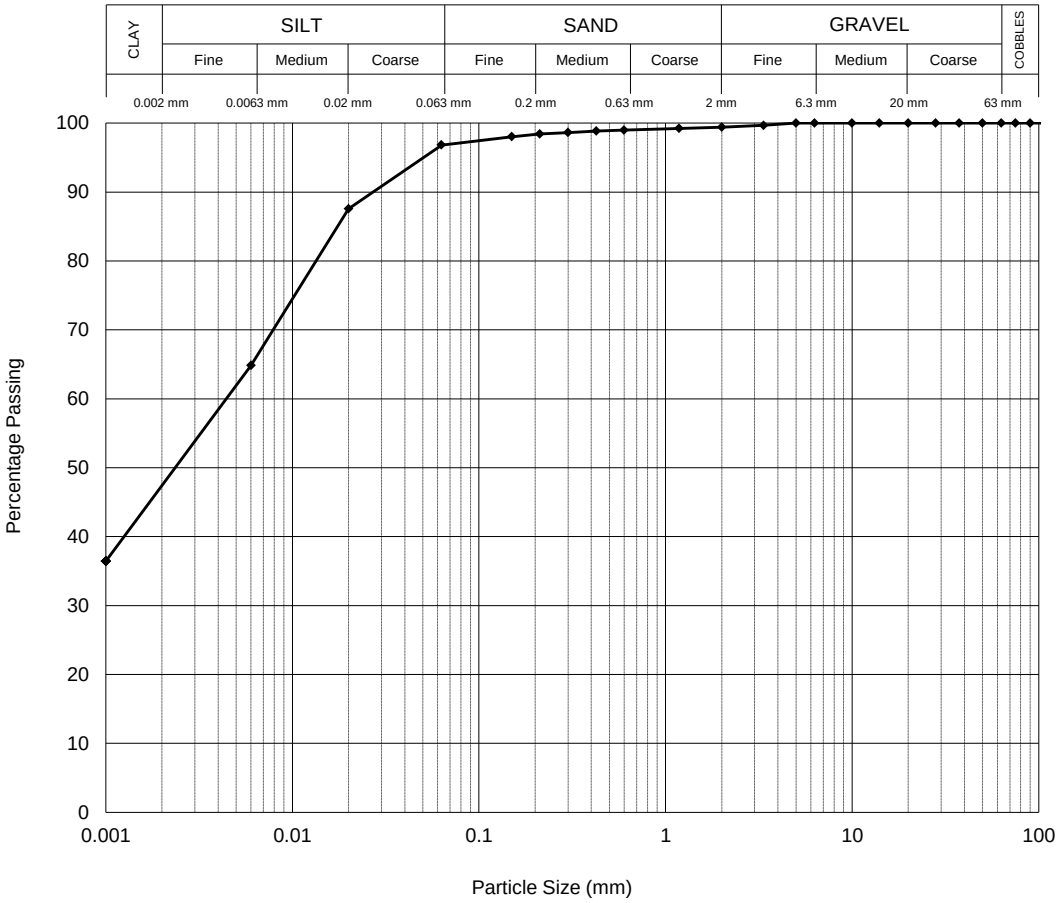
BH / TP No.	GT2
Sample Ref	G3L3

Description

Dark grey silty CLAY with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	65
1 µm	36
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

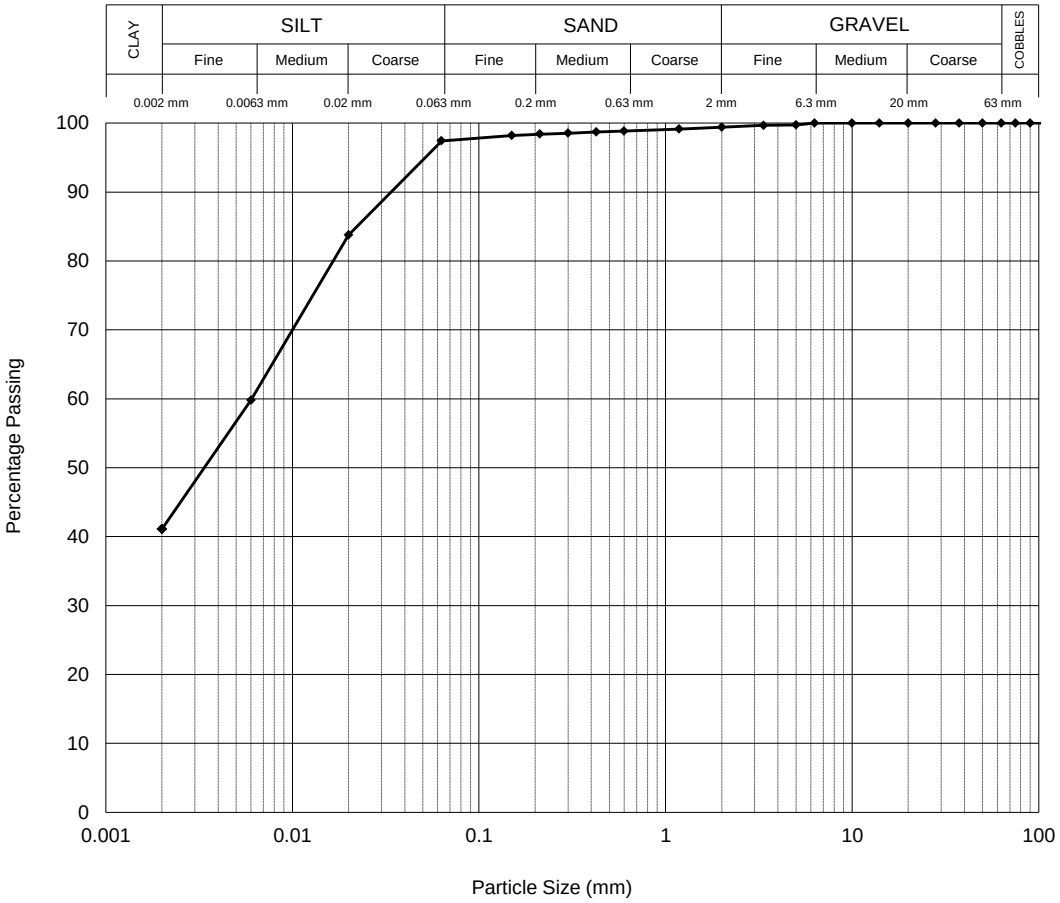
BH / TP No.	GT5
Sample Ref	D4L-10

Description

Dark grey silty CLAY with rare rootlets.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	60
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

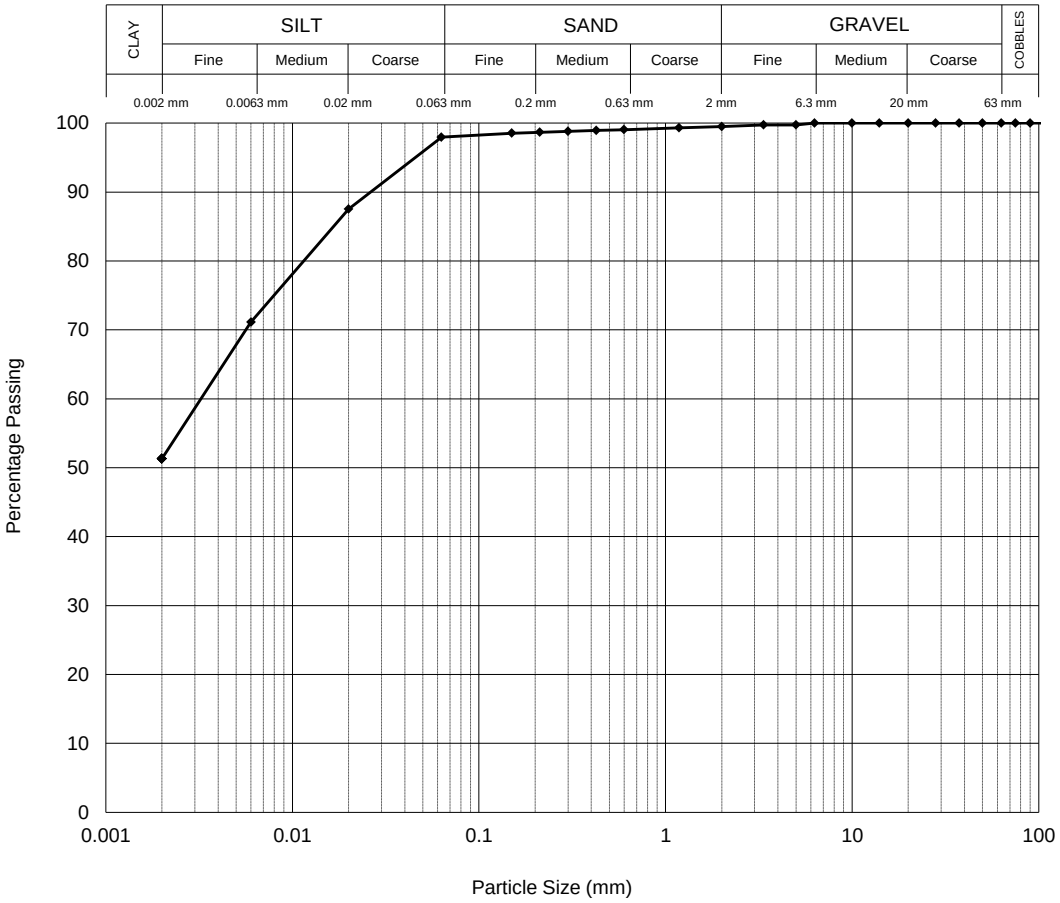
BH / TP No.	GT8
Sample Ref	E3L2

Description

Dark grey silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	71
2 µm	51

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	47
Clay	50

Checked and Approved by

S Burke

S Burke - Senior Technician
10/08/2018

Project Number:

GEO / 27760

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F3 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	46	21	25		
F4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.4	100	47	20	27		
F5 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13089

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	16	Jul-18
Date of receipt of testing instructions	16	Jul-18
Date testing started:	17	Jul-18
Date of issue:	17	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F3 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	46	21	25		
F4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.4	100	47	20	27		
F5 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		F4L3	B	Dark grey silty CLAY	2.70	2
GT5		F5L2	B	Dark grey silty CLAY	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
17/08/2018

Project Number:

GEO / 27812

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

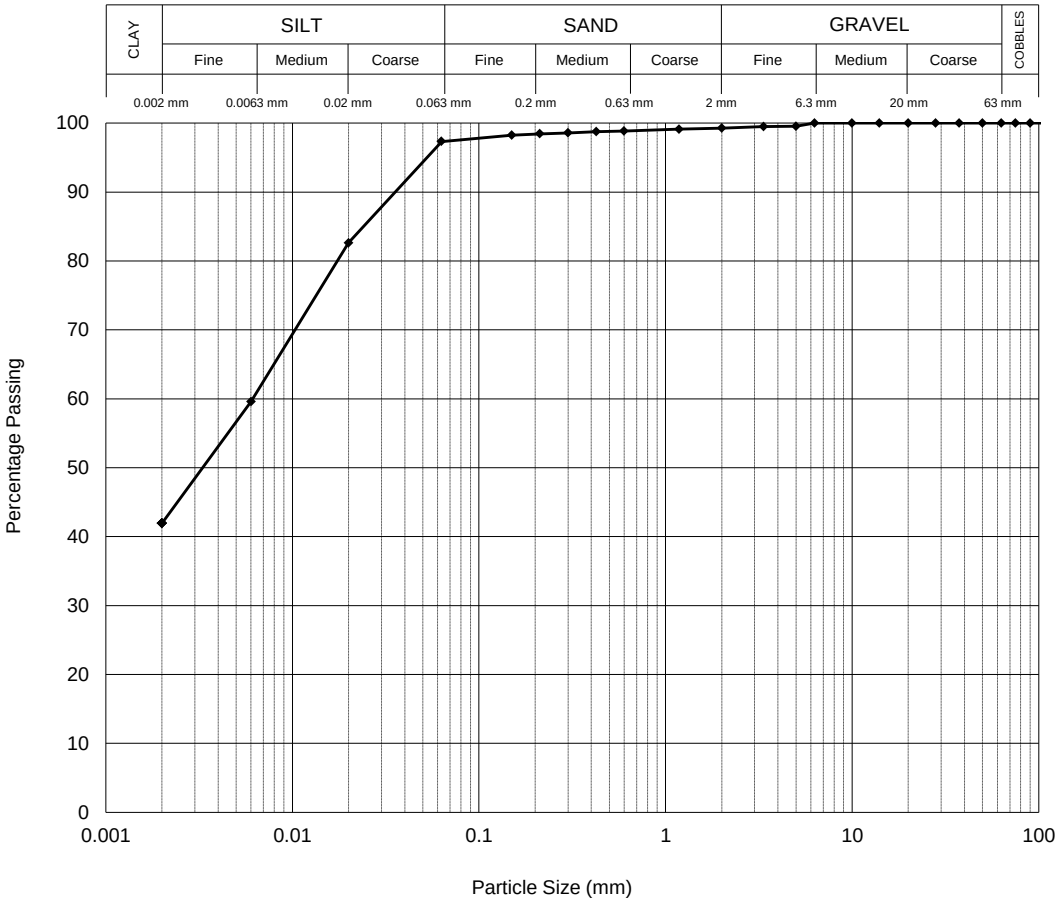
BH / TP No.	GT2
Sample Ref	F4L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	60
2 µm	42
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
17/08/2018

Project Number:

GEO / 27812

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

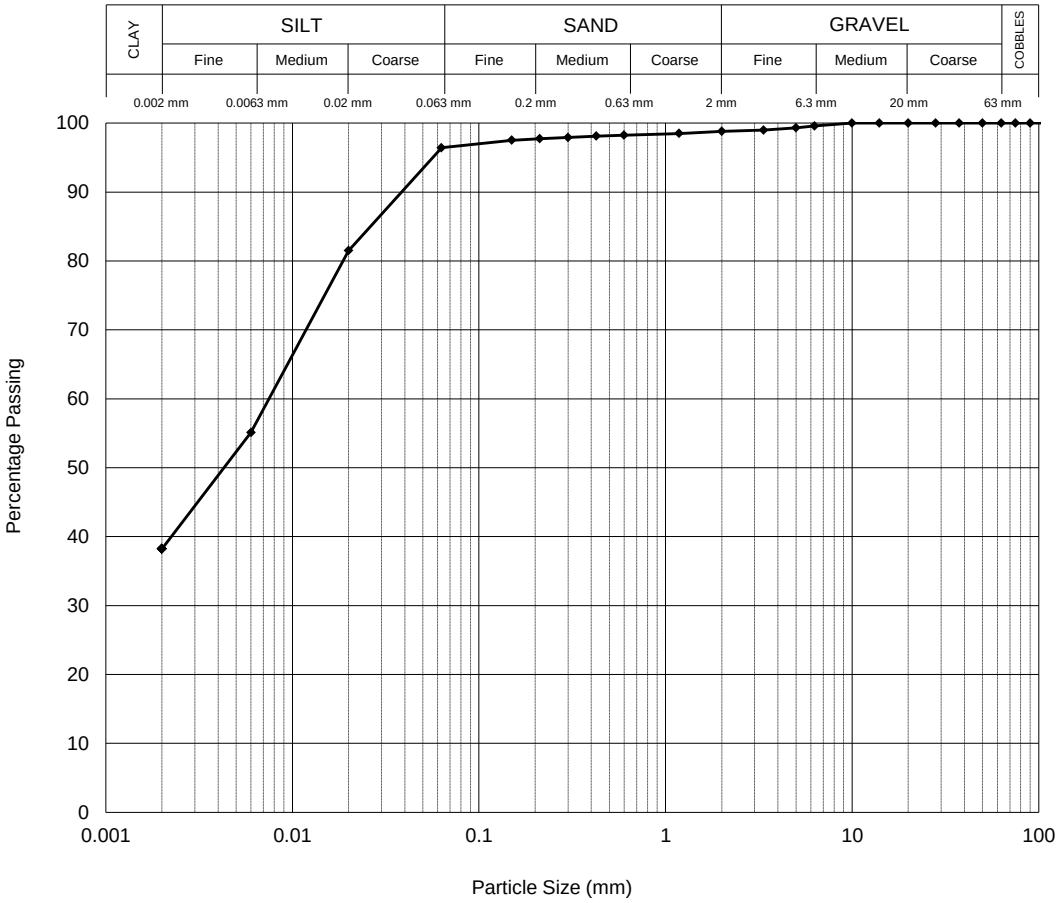
BH / TP No.	GT5
Sample Ref	F5L2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	82
6 µm	55
2 µm	38
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	58
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
17/08/2018

Project Number:

GEO / 27812

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	49	22	27		
G4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.4	100	49	21	28		
G5 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	99	50	20	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13090

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	13	Jul-18
Date of receipt of testing instructions	13	Jul-18
Date testing started:	16	Jul-18
Date of issue:	14	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	49	22	27		
G4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.4	100	49	21	28		
G5 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	99	50	20	30		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT4		F2L3	BB	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27813

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

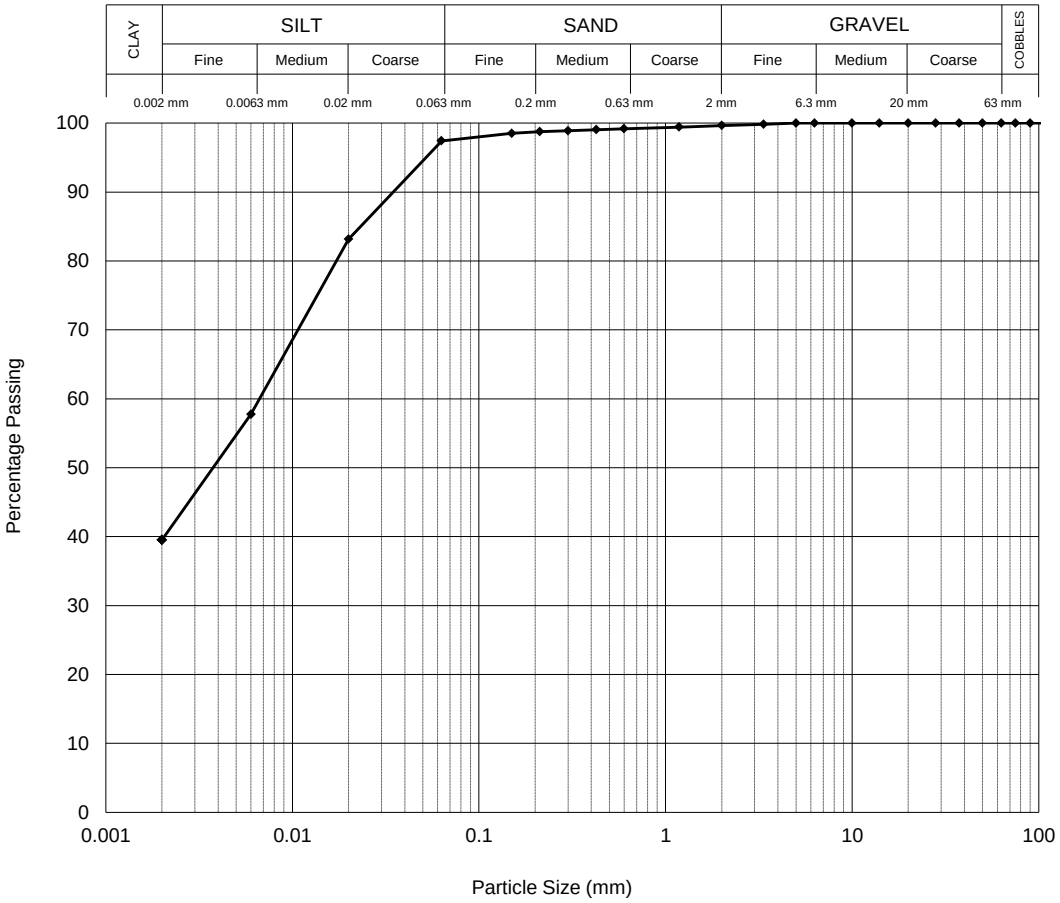
BH / TP No.	GT4
Sample Ref	F2L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	58
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	58
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27813

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13095

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Date (s) sampled and received at laboratory:	17	Jul-18
Date of receipt of testing instructions	17	Jul-18
Date testing started:	17	Jul-18
Date of issue:	9	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	47	22	25		
D5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.1	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C4 L1	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	21	27		
E2 L3	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	22	27		
E3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.6	100	49	22	27		
E4 L3	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.3	100	51	22	29		
E5 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B3 L1	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			27.5	100	47	21	26		
B4 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.6	100	50	22	28		
B5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	21	31		
C3 L1	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.6	88	49	22	27		
C5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13111

Number of samples submitted for testing:	7	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	19	Jul-18
Date of receipt of testing instructions	19	Jul-18
Date testing started:	20	Jul-18
Date of issue:	23	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B3 L1	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			27.5	100	47	21	26		
B4 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.6	100	50	22	28		
B5 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	52	21	31		
C3 L1	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.6	88	49	22	27		
C5 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
BGT7		C3L1	B	Dark grey CLAY and SILT with rare fossil fragments.	2.68	2
GT5		B3L1	B	Dark grey CLAY and SILT with rare fossil fragments.	2.66	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27842

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1534773221)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

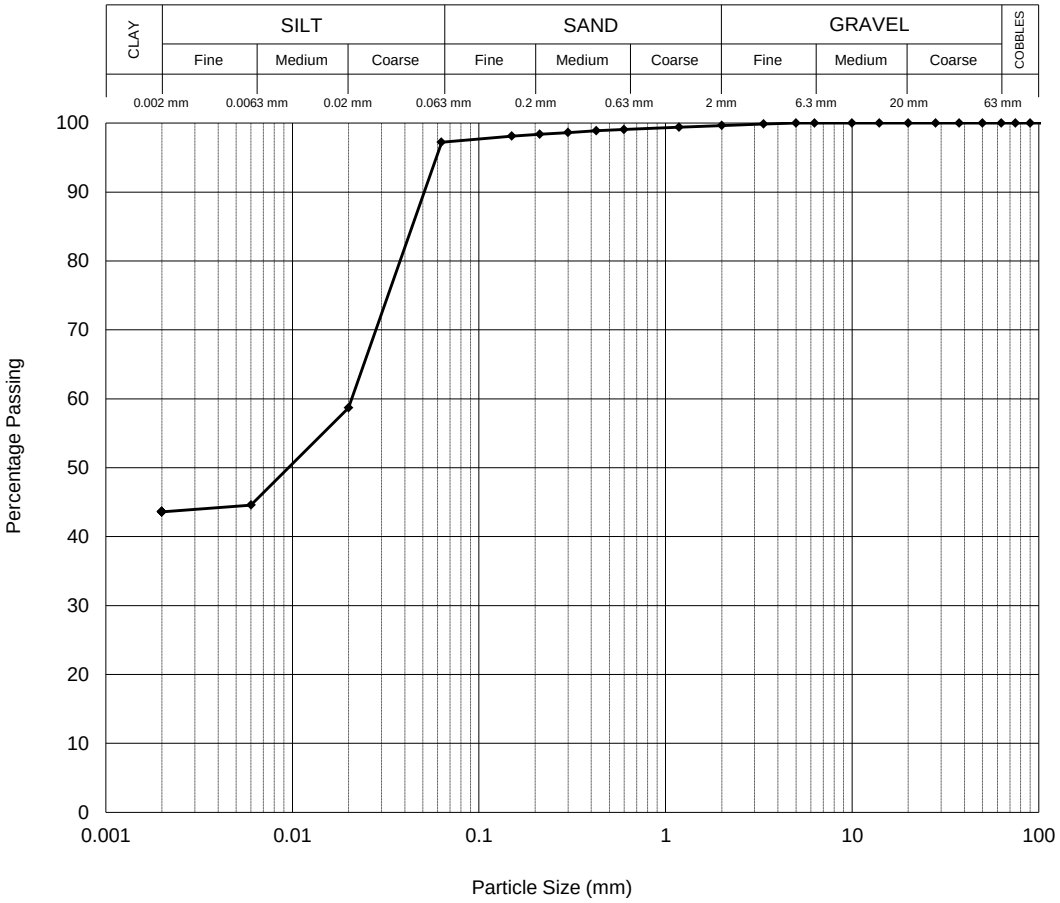
BH / TP No.	BGT7
Sample Ref	C3L1
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	59
6 µm	45
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27842

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

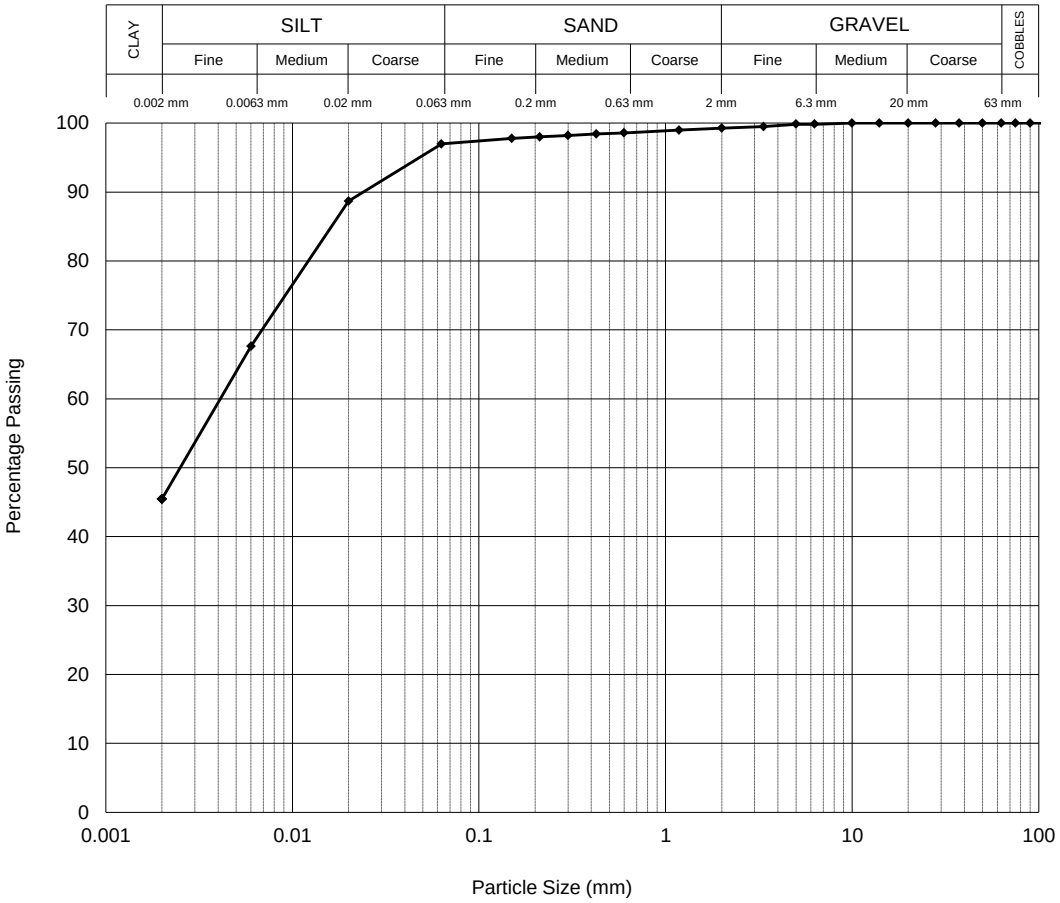
BH / TP No.	GT5
Sample Ref	B3L1
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	68
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	52
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27842

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D3 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	49	21	28		
G2 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.2	100	50	21	29		
G3 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.0	100	51	22	29		
F3 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	48	21	27		
G4 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.3	100	48	22	26		
G5 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.0	99	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13121

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	23	Jul-18
Date of receipt of testing instructions	23	Jul-18
Date testing started:	24	Jul-18
Date of issue:	23	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
F2 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.0	100	51	22	29		
F3 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	48	21	27		
G4 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.3	100	48	22	26		
G5 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.0	99	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
G2		G4-L4	B	Dark grey very clayey SILT with rare fossil fragments.	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27839

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1534767630)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

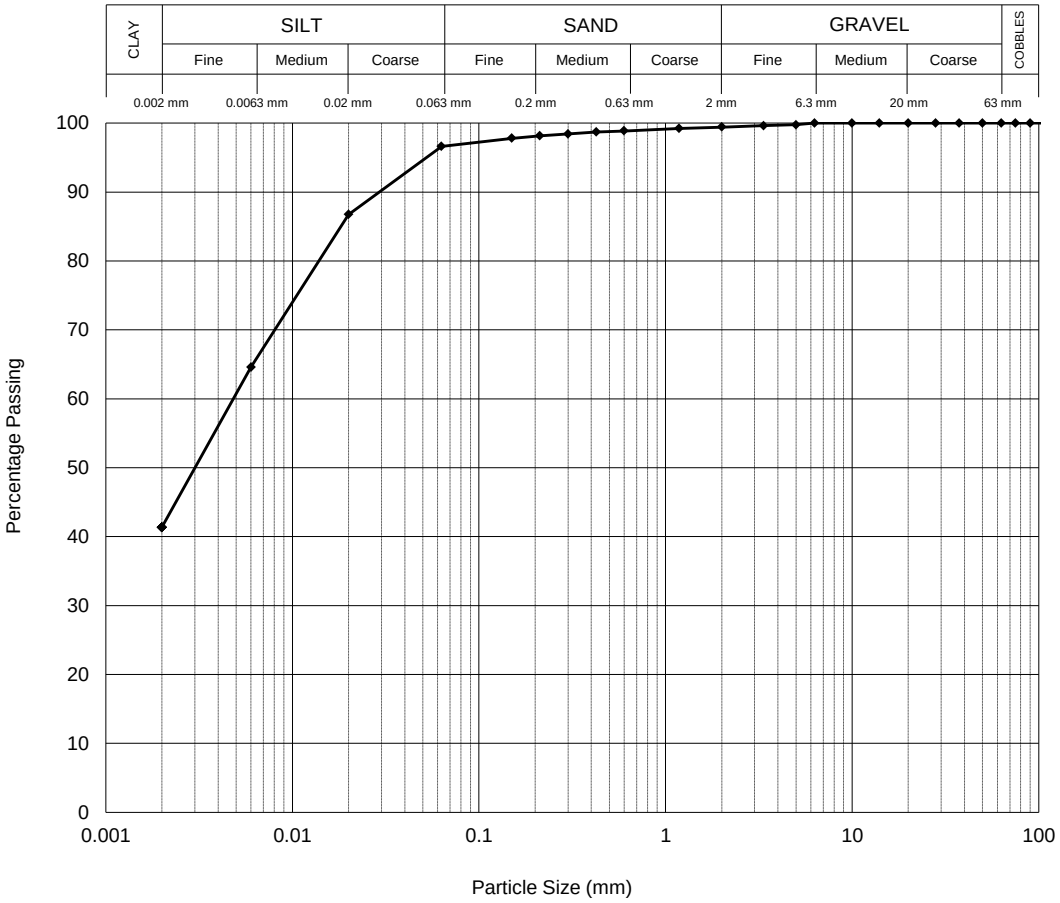
BH / TP No.	G2
Sample Ref	G4-L4
Sample Type	B

Description

Dark grey very clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27839

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
E1 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.2	100	50	21	29		
E2 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.4	100	47	21	26		
F4 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.3	100	49	22	27		
F5 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	99	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
E3 L4	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	48	21	27		
E4 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.6	100	47	20	27		
E5 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	49	20	29		
G1 L5	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13140

Number of samples submitted for testing:	3	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	27	Jul-18
Date of receipt of testing instructions	27	Jul-18
Date testing started:	30	Jul-18
Date of issue:	23	Aug-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
F4 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			21.5	100	47	20	27		
F5 L4	GT1	0.00		B	Dark grey slightly sandy CLAY			22.1	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F4L5	B	Dark grey CLAY and SILT	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27865

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

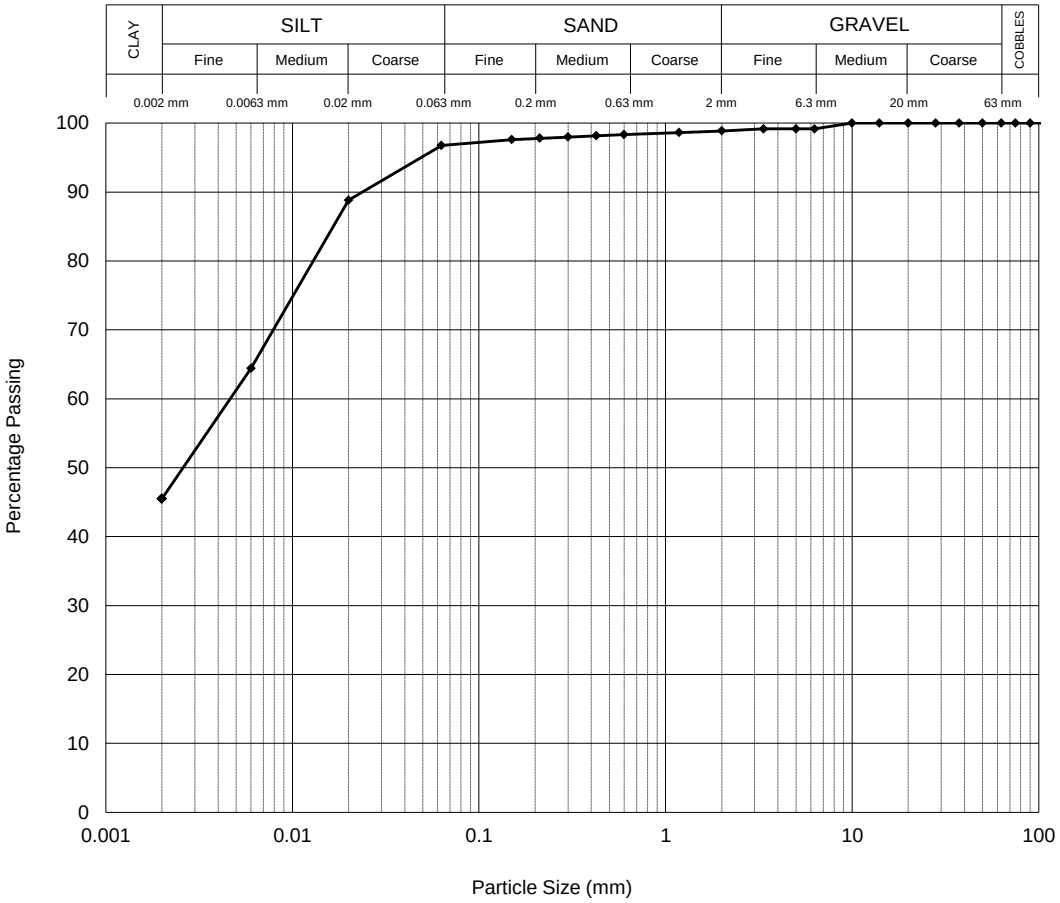
BH / TP No.	GT3
Sample Ref	F4L5
Sample Type	B

Description

Dark grey CLAY and SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	64
2 µm	45
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	51
Clay	46

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27865

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E3L5	B	Dark grey silty CLAY	2.68	2
GT5		E5L5	B	Dark grey silty CLAY	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

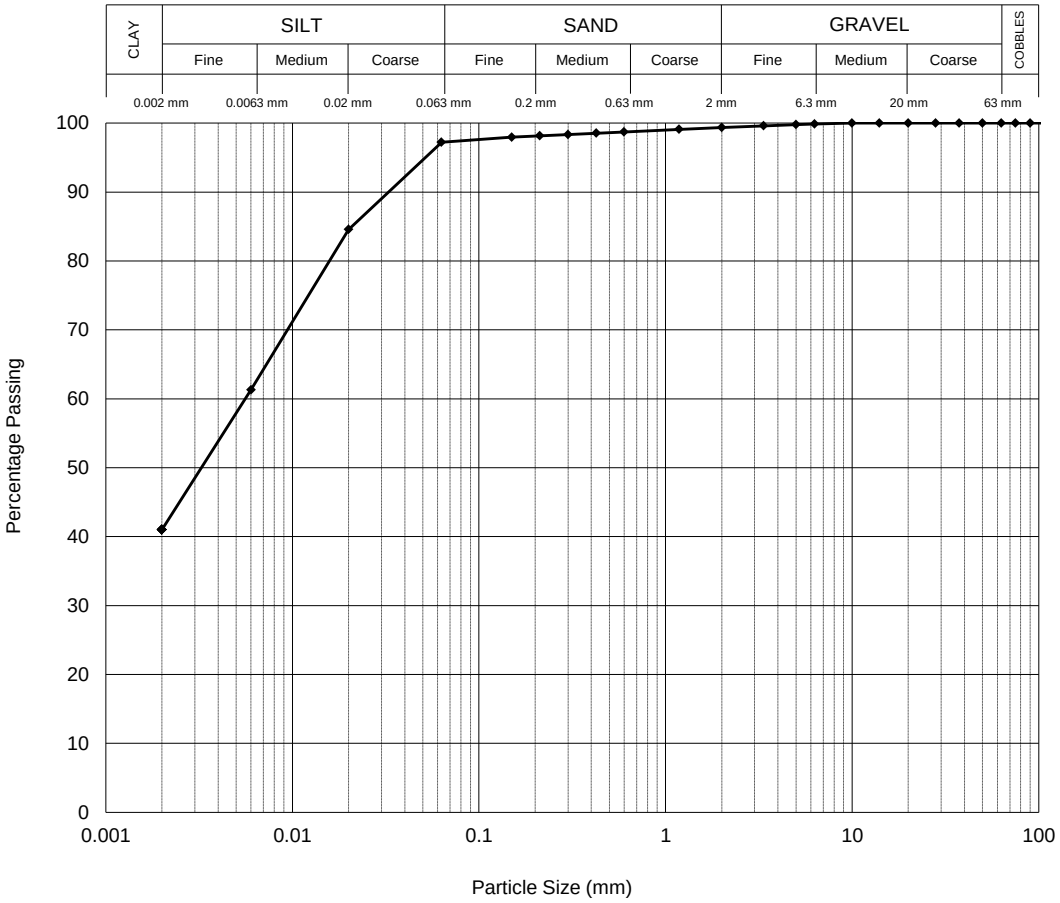
BH / TP No.	GT1
Sample Ref	E3L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

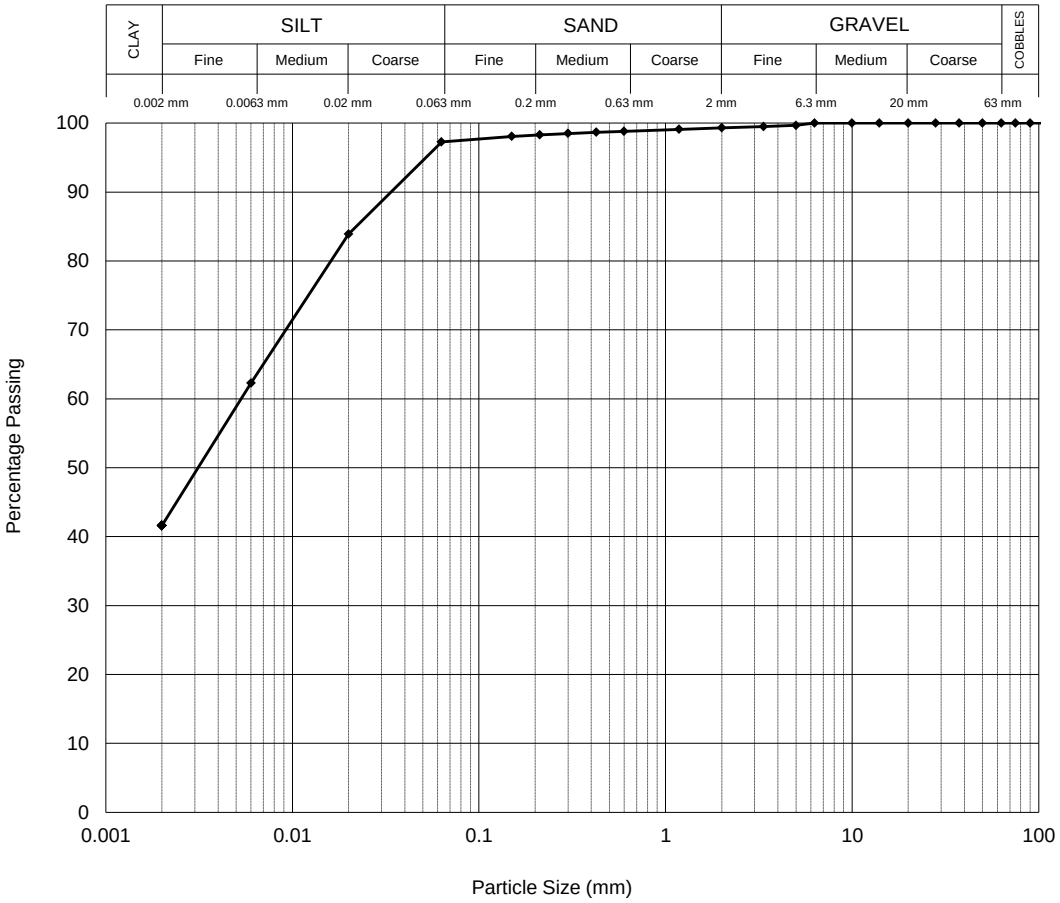
BH / TP No.	GT5
Sample Ref	E5L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	62
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E3L5
Sample Type:	C

Description:
Stiff dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	98.94	98.52
Height	*mm*	100.12	99.70
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.04	2.11
Dry Density	*Mg/m³*	1.66	1.69

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.36	0.99

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	9.8

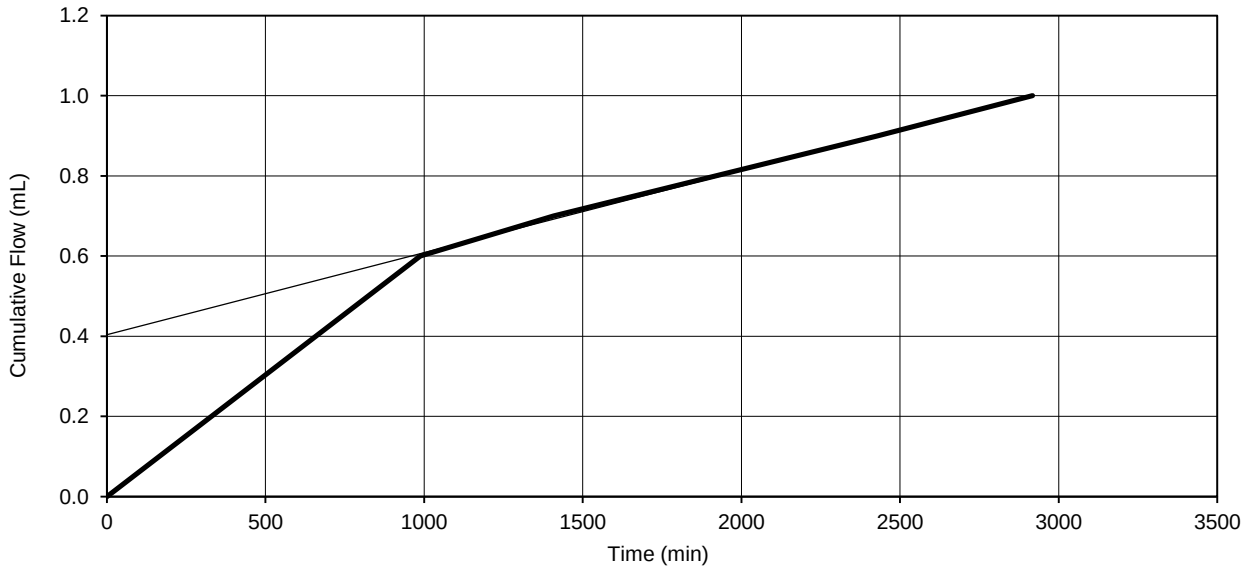
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	5
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 4.4×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
09/10/2018

Project Number:

GEO / 27931

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13151

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	2	Aug-18
Date of receipt of testing instructions	2	Aug-18
Date testing started:	6	Aug-18
Date of issue:	2	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B2 L7	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.0	100	47	22	25		
B3 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.4	99	47	21	26		
C4 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		B3L2	B	Dark grey clayey SILT	2.69	2
GT5		C4L2	B	Dark grey clayey SILT	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
29/08/2018

Project Number:

GEO / 27870

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

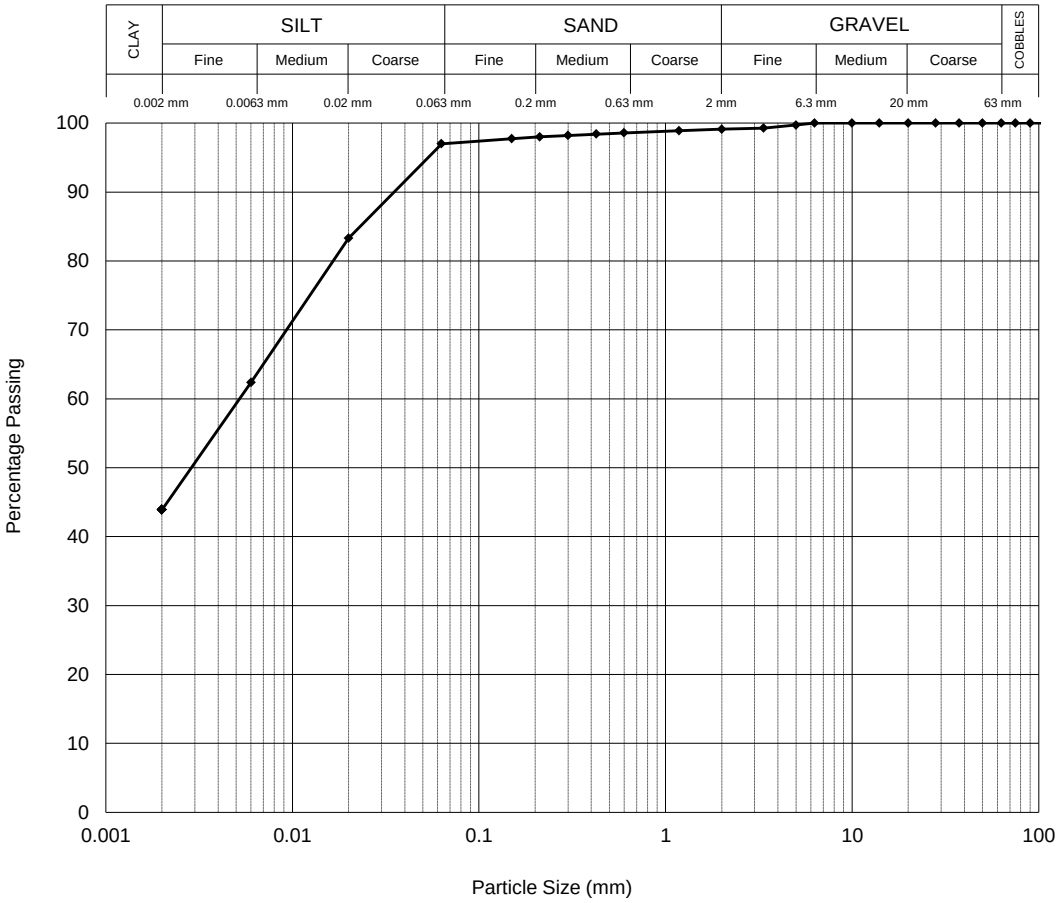
BH / TP No.	GT1
Sample Ref	B3L2
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	62
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	53
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
29/08/2018

Project Number:

GEO / 27870

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

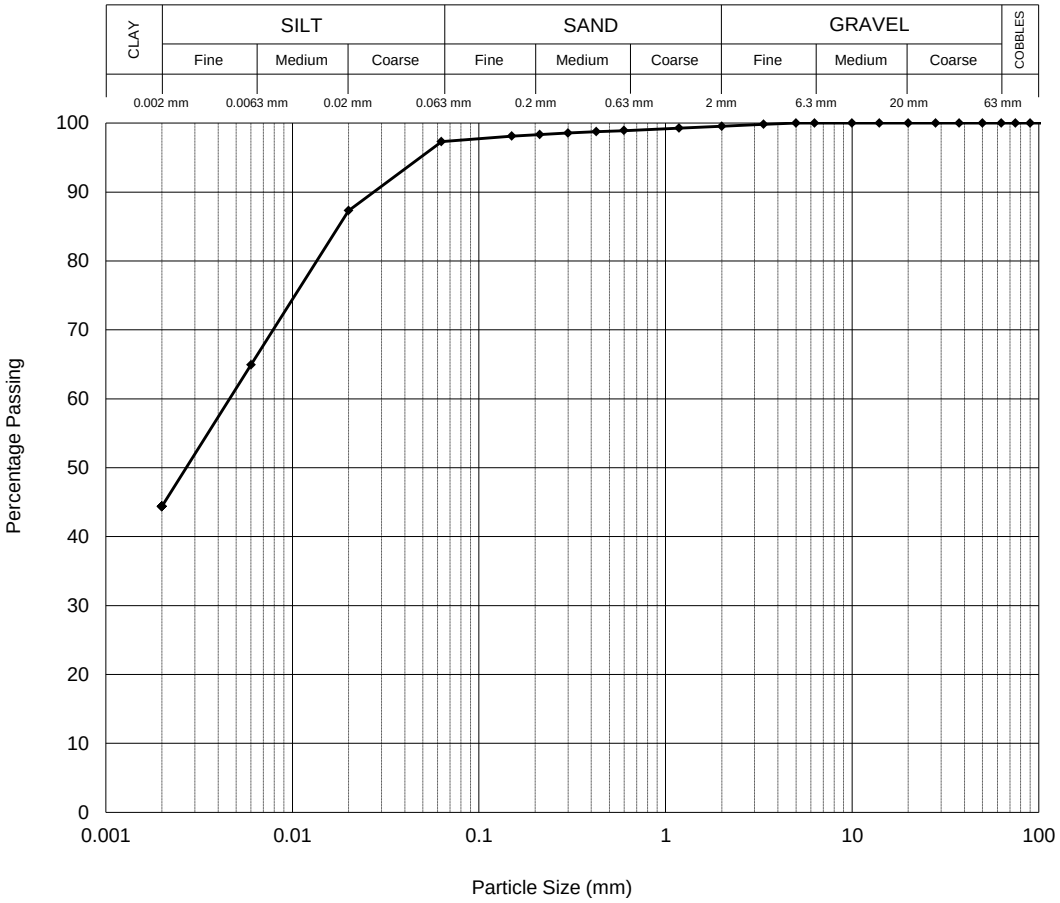
BH / TP No.	GT5
Sample Ref	C4L2
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	53
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
29/08/2018

Project Number:

GEO / 27870

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C3 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	22	26		
G4 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.7	100	50	22	28		
G5 L5	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	97	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13162

cjassociates

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	3	test(s)
Grading	3	test(s)
Date (s) sampled and received at laboratory:	3	Aug-18
Date of receipt of testing instructions	3	Aug-18
Date testing started:	6	Aug-18
Date of issue:	12	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C3 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	22	26		
G4 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.7	100	50	22	28		
G5 L5	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	97	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		G4L6	B	Dark grey silty CLAY	2.68	2
GT3		G5L5	B	Dark grey silty CLAY	2.70	2
GT4		C3L2	B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

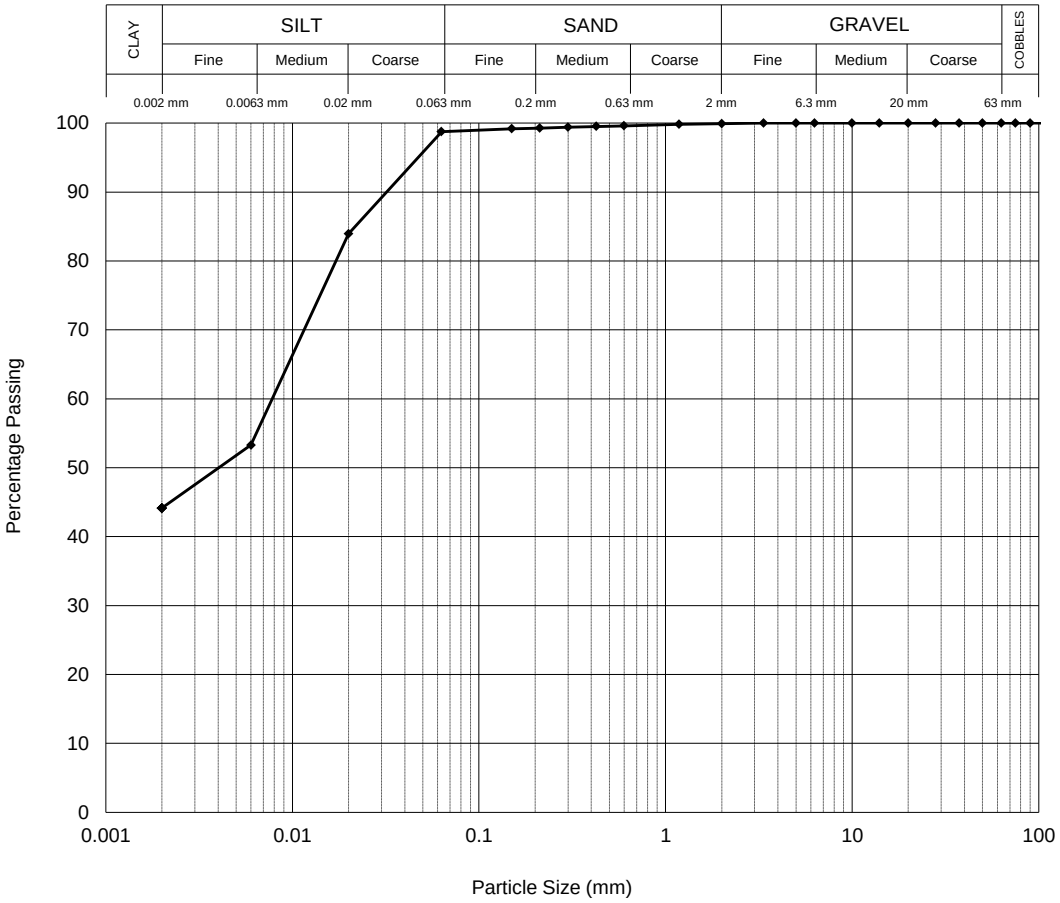
BH / TP No.	GT1
Sample Ref	G4L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	53
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

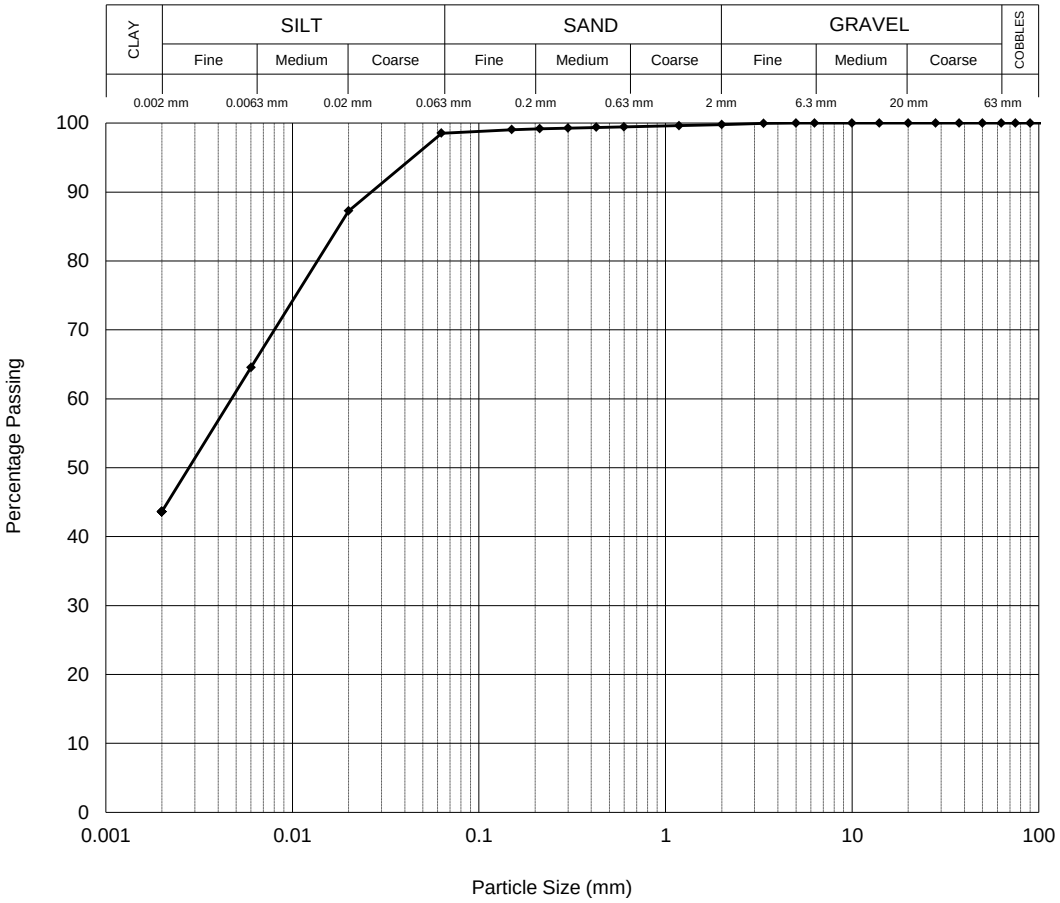
BH / TP No.	GT3
Sample Ref	G5L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

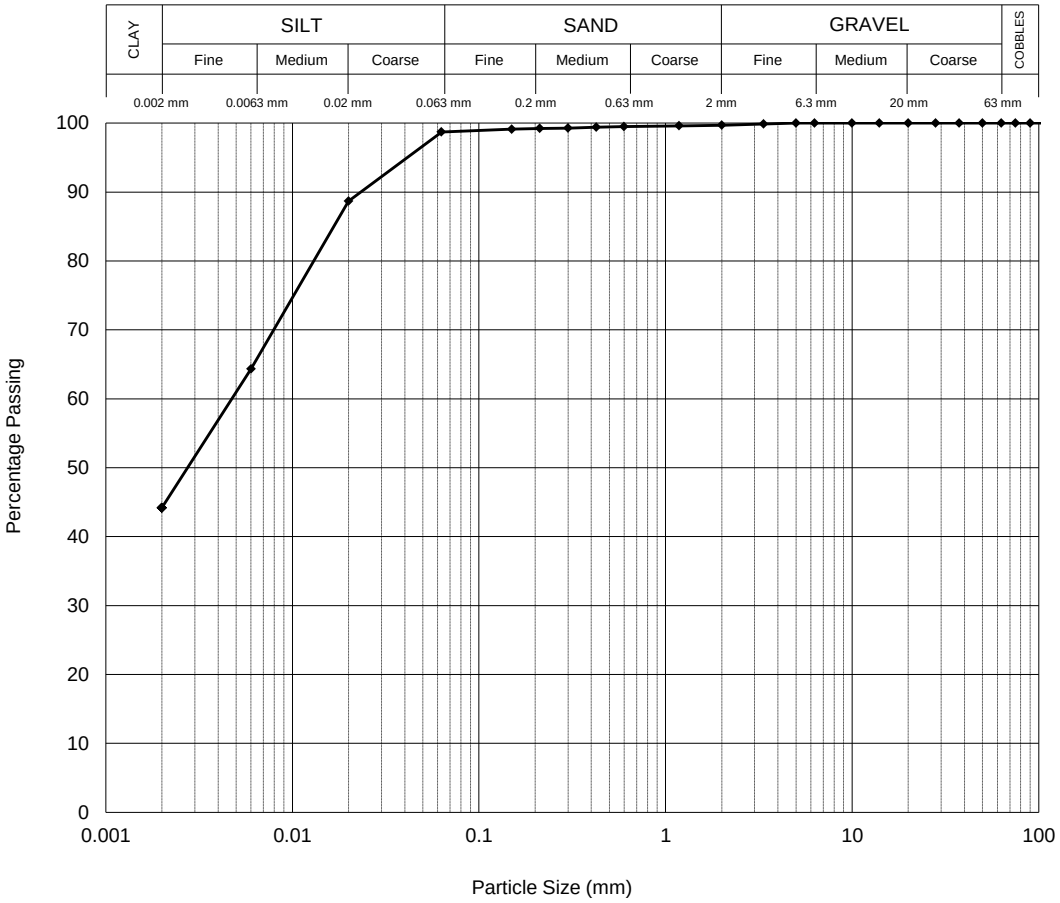
BH / TP No.	GT4
Sample Ref	C3L2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	64
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	55
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
10/09/2018

Project Number:

GEO / 27929

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
F2 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	48	21	27		
F3 L6	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	47	21	26		
G2 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	49	22	27		
G3 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.0	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F2L6	B	Dark grey silty CLAY	2.70	2
GT6		F3L6	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

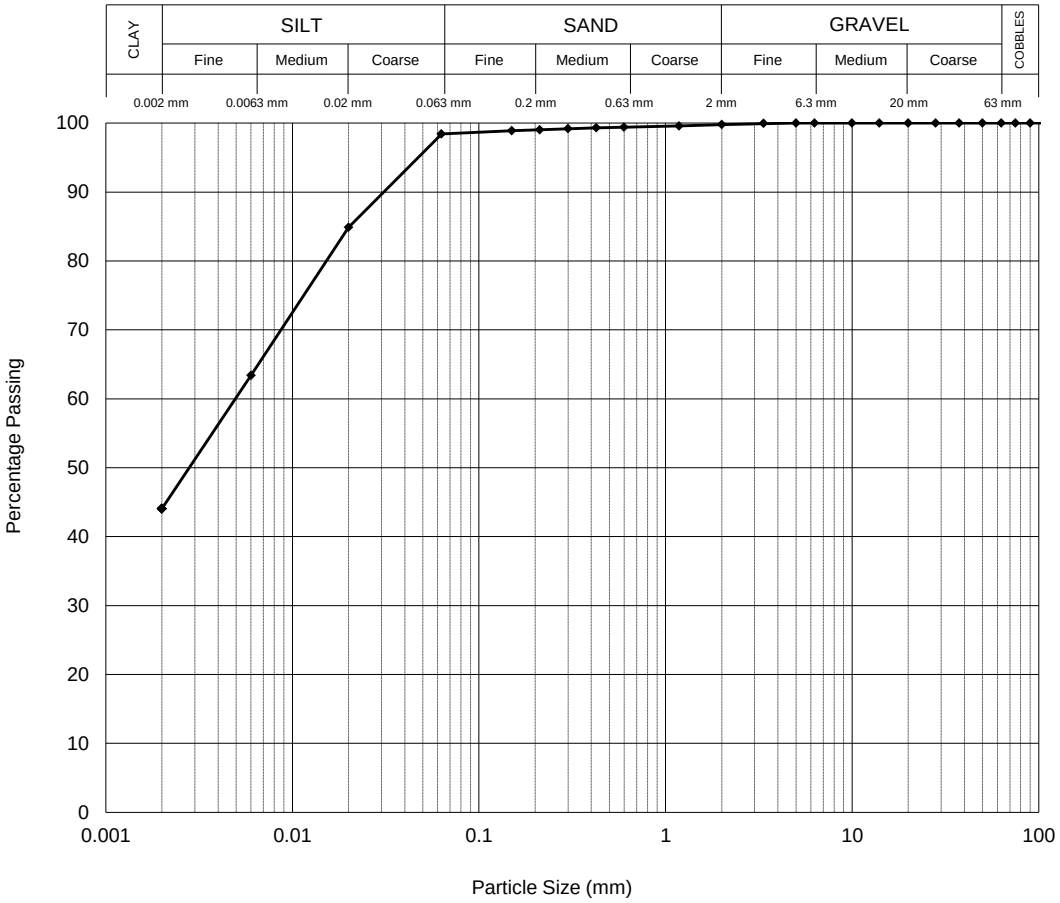
BH / TP No.	GT3
Sample Ref	F2L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	63
2 µm	44
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

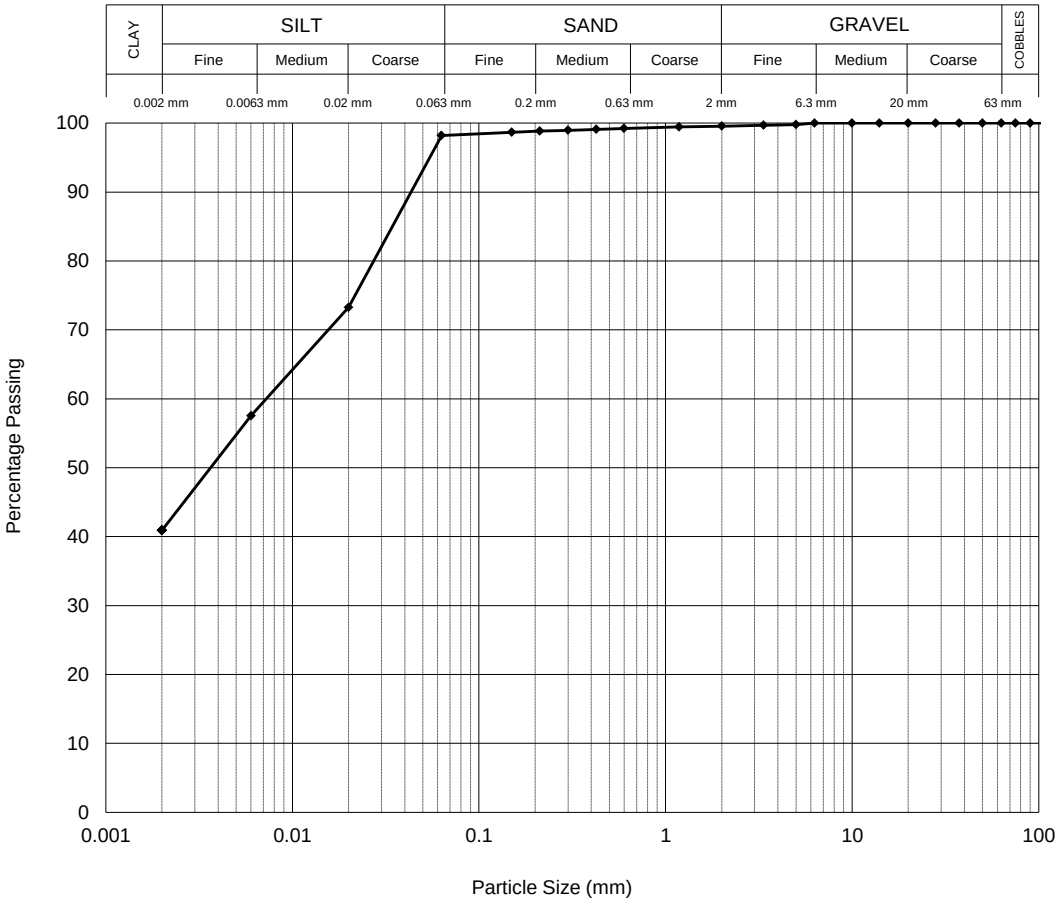
BH / TP No.	GT6
Sample Ref	F3L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	73
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	57
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

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BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	G2L6
Sample Type:	C

Description:
Stiff dark grey CLAY.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.35	99.15
Height	*mm*	99.22	99.02
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.07	2.12
Dry Density	*Mg/m³*	1.69	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.64	0.96

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	4.8

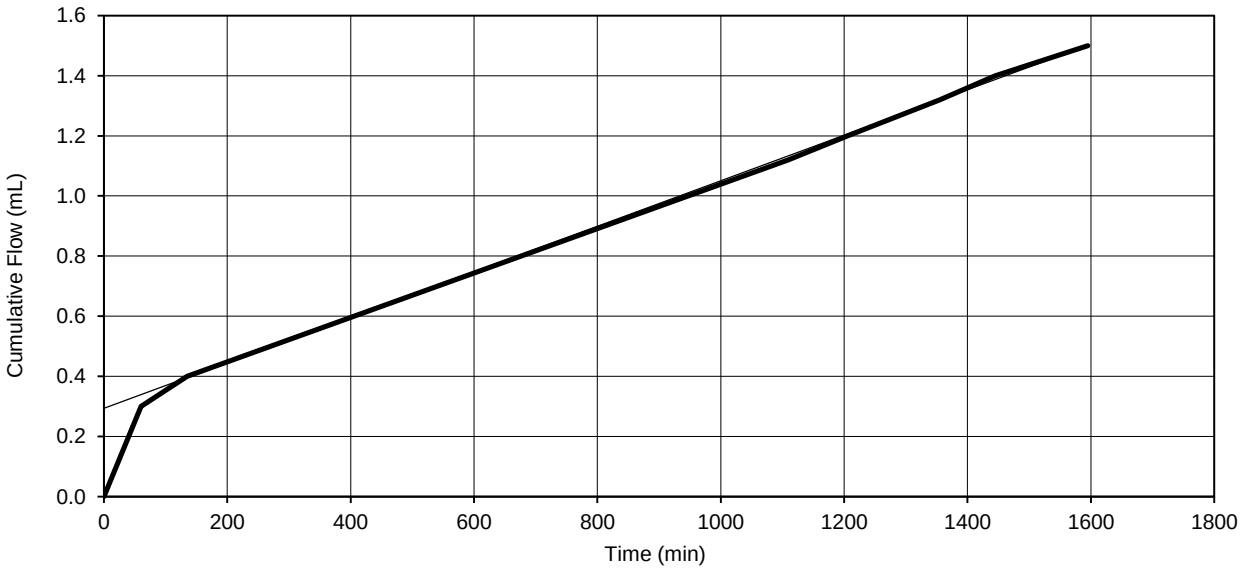
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.6×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
09/10/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
E1 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	47	22	25		
F4 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	49	21	28		
G4 L7	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13174

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)

Date (s) sampled and received at laboratory:	8	Aug-18
Date of receipt of testing instructions	8	Aug-18
Date testing started:	10	Aug-18
Date of issue:	4	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
E1 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	47	22	25		
F4 L6	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	49	21	28		
G4 L7	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		F4L6	B	Dark grey silty CLAY	2.73	2
GT2		G4L7	B	Dark grey silty CLAY	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
03/09/2018

Project Number:

GEO / 27927

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

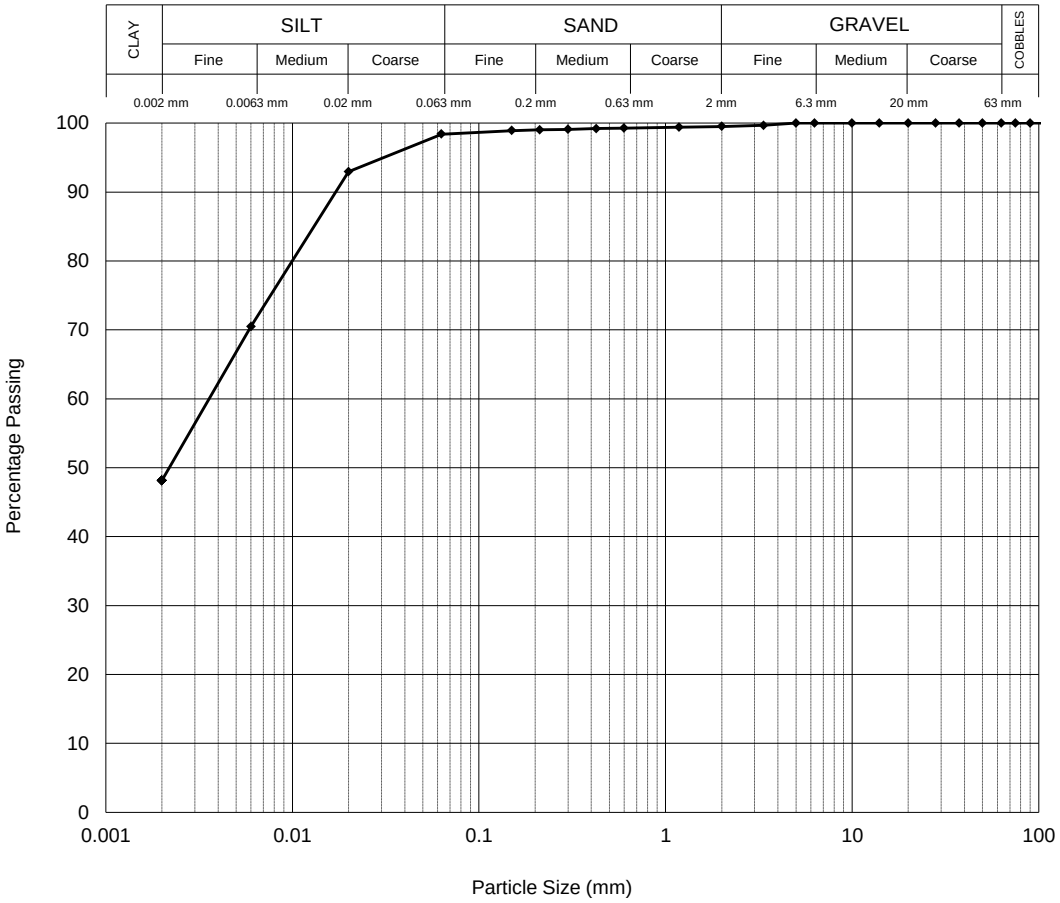
BH / TP No.	GT1
Sample Ref	F4L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	93
6 µm	70
2 µm	48

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	50
Clay	49

Checked and Approved by

S Burke

S Burke - Senior Technician
03/09/2018

Project Number:

GEO / 27927

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

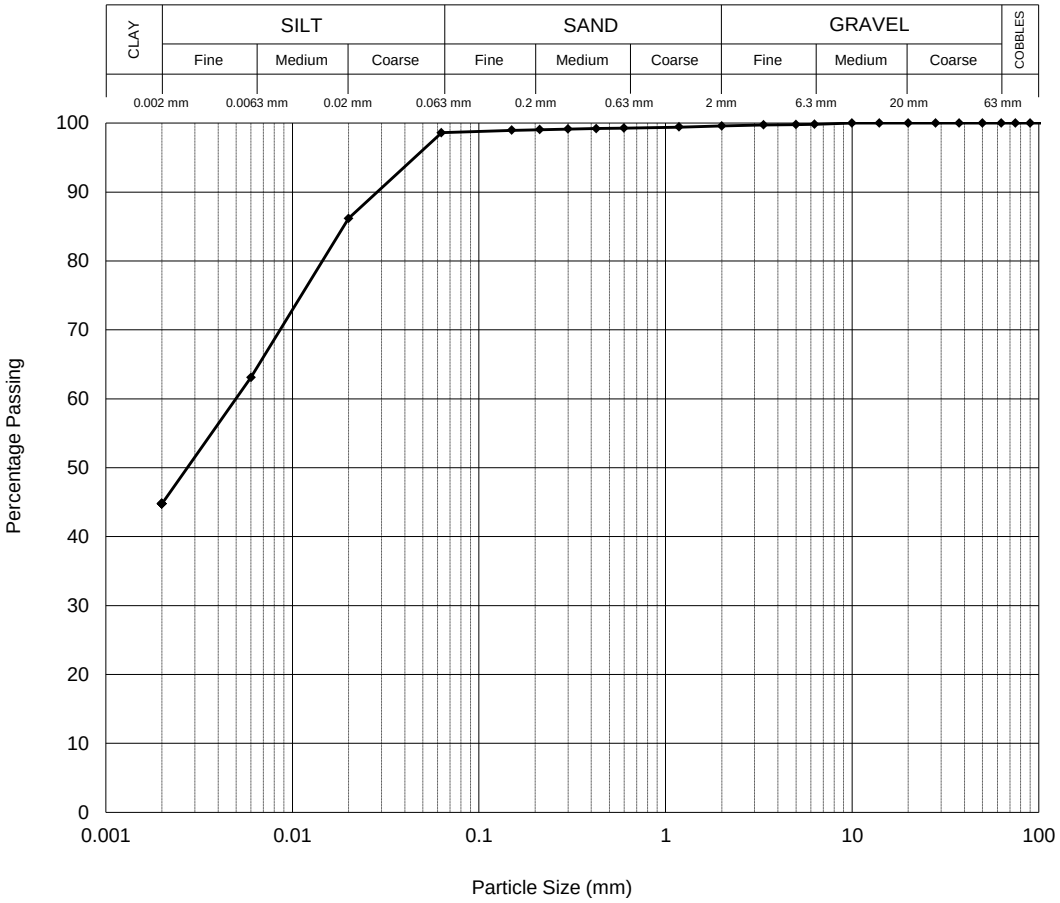
BH / TP No.	GT2
Sample Ref	G4L7
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	45
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
03/09/2018

Project Number:

GEO / 27927

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
E2 L6	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	49	21	28		
E3 L6	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	48	22	26		
E4 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	49	22	27		
E5 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.3	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13179

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	9	Aug-18
Date of receipt of testing instructions	9	Aug-18
Date testing started:	10	Aug-18
Date of issue:	5	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
E2 L6	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.0	100	49	21	28		
E3 L6	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	48	22	26		
E4 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	49	22	27		
E5 L6	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.3	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		E5L6	B	Dark grey silty CLAY	2.71	2
GT4		E4L6	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27928

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

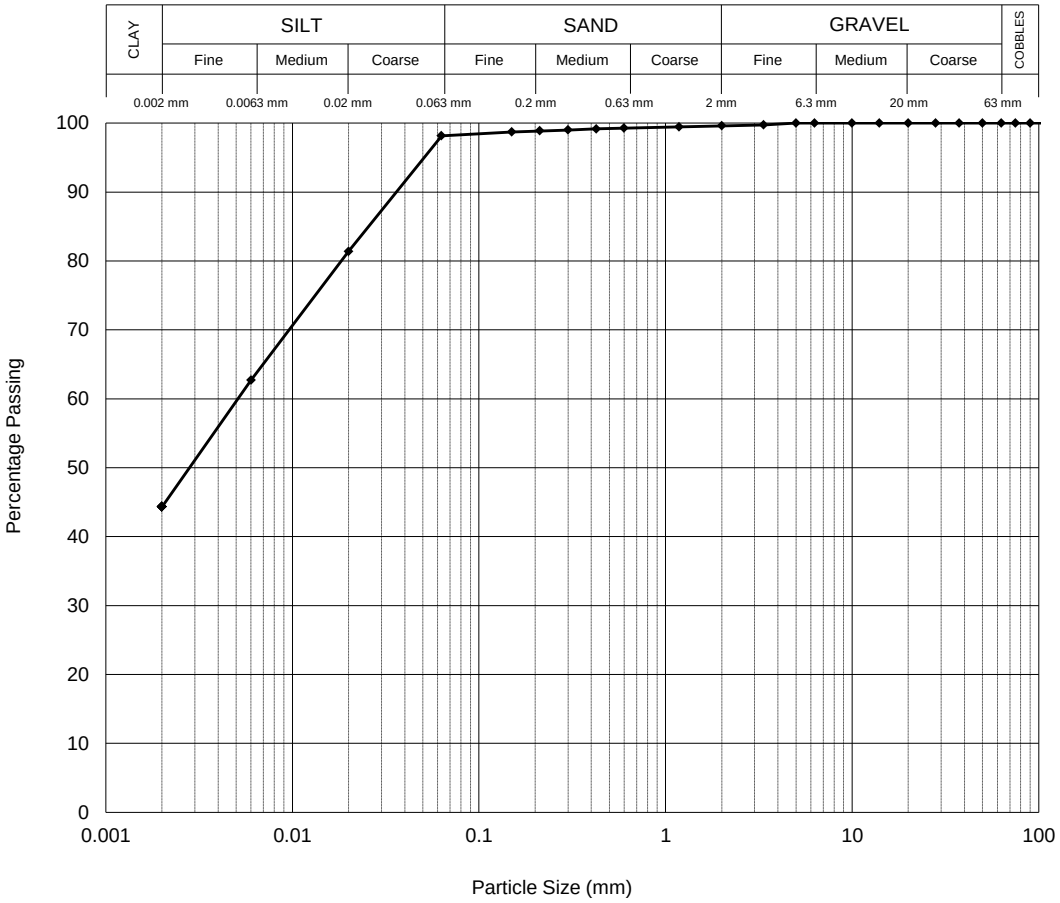
BH / TP No.	GT2
Sample Ref	E5L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	63
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27928

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

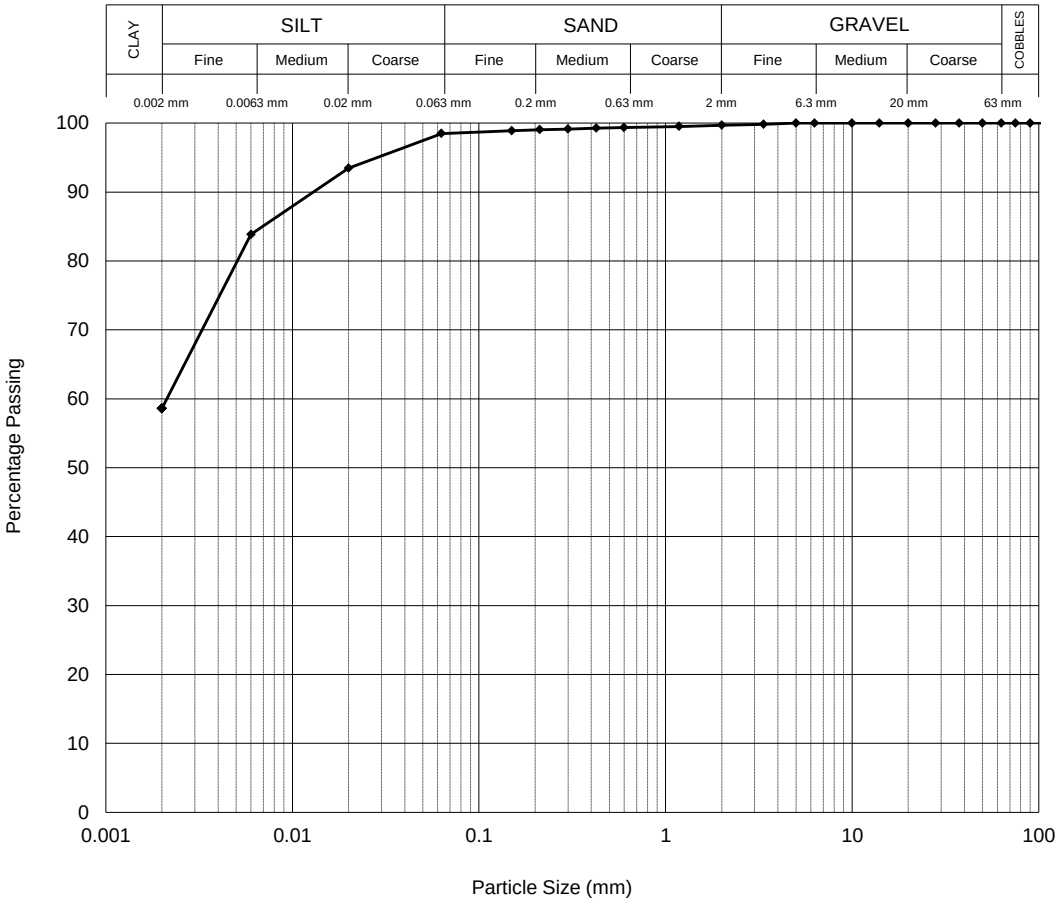
BH / TP No.	GT4
Sample Ref	E4L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	93
6 µm	84
2 µm	59

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	40
Clay	59

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27928

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Sample Top	Sample Base	Sample Type	Soil Description	Density bulk Mg/m3	Density dry Mg/m3	w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
B1 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	48	22	26		
B1 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.4	100	47	21	26		
E1 L7	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13185

Number of samples submitted for testing:	3	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Date (s) sampled and received at laboratory:	15	Aug-18
Date of receipt of testing instructions	15	Aug-18
Date testing started:	16	Aug-18
Date of issue:	2	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C1 L6	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.7	100	46	21	25		
D1 L5A	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.9	100	45	21	24		
D1 L6	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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		sheet 1

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B1 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	46	21	25		
C1 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	46	22	24		
D1 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B1 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	46	21	25		
C1 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	46	22	24		
D1 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		C1L7	B	Dark grey clayey SILT.	2.66	2
GT4		D1L7	B	Dark grey CLAY and SILT.	2.70	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

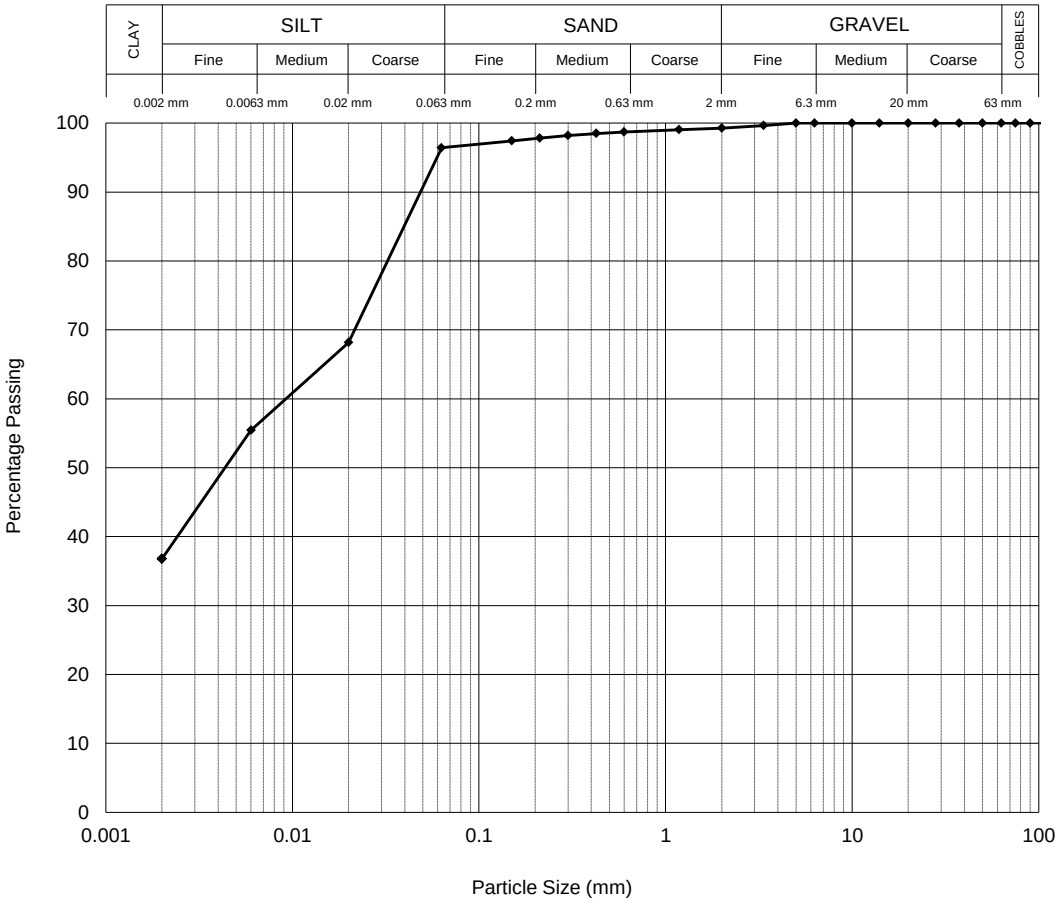
BH / TP No.	GT2
Sample Ref	C1L7
Sample Type	B

Description

Dark grey clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	68
6 µm	55
2 µm	37
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	60
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

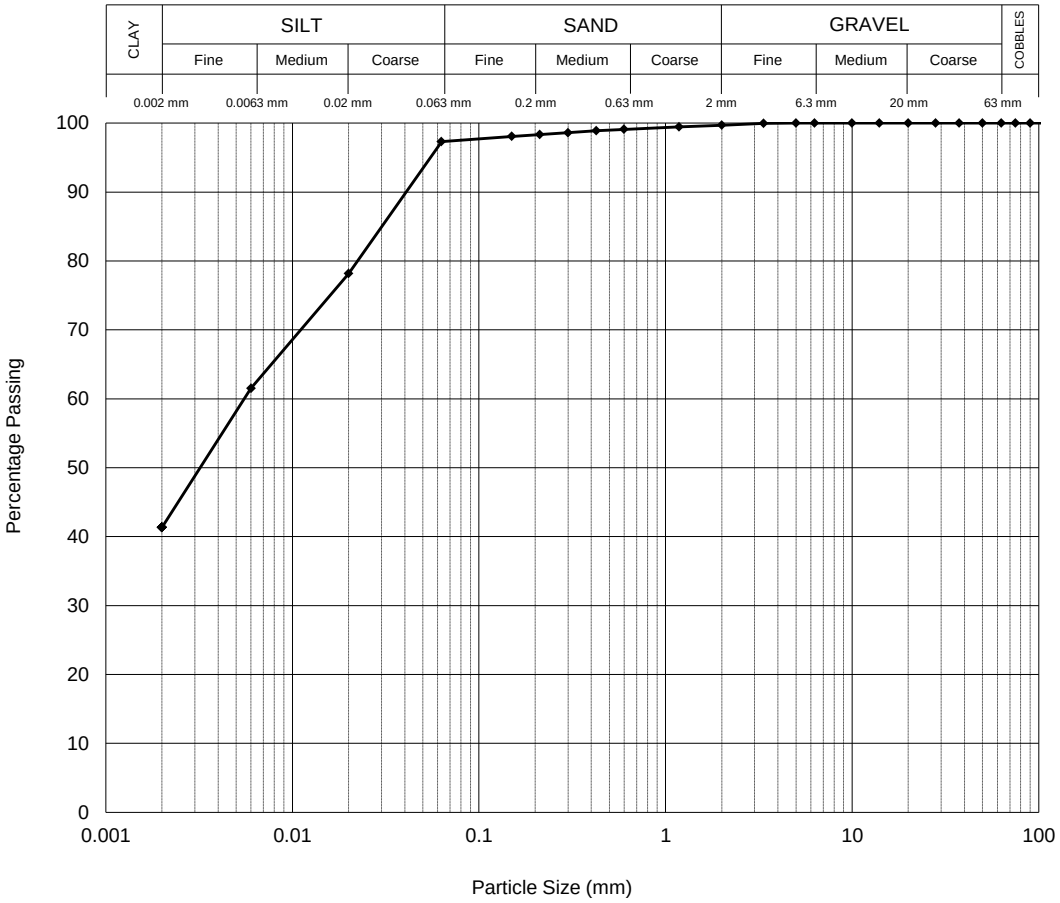
BH / TP No.	GT4
Sample Ref	D1L7
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	62
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C2 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	45	22	23		
D2 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	45	22	23		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key			Date Printed	Approved By	Table
Density test	Liquid Limit	Particle density			1
Linear measurement unless :	4pt cone unless :	sp - small pyknometer	09/02/2018 00:00		
wd - water displacement	cas - Casagrande method	gj - gas jar			sheet
wi - immersion in water	1pt - single point test				1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C2 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	45	22	23		
D2 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	45	22	23		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key			Date Printed	Approved By	Table
Density test	Liquid Limit	Particle density			1
Linear measurement unless :	4pt cone unless :	sp - small pyknometer	09/02/2018 00:00		
wd - water displacement	cas - Casagrande method	gj - gas jar			sheet
wi - immersion in water	1pt - single point test				1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		C2L7	B	Dark grey CLAY and SILT.	2.71	2
GT4		D2L7	B	Dark grey very clayey SILT.	2.69	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

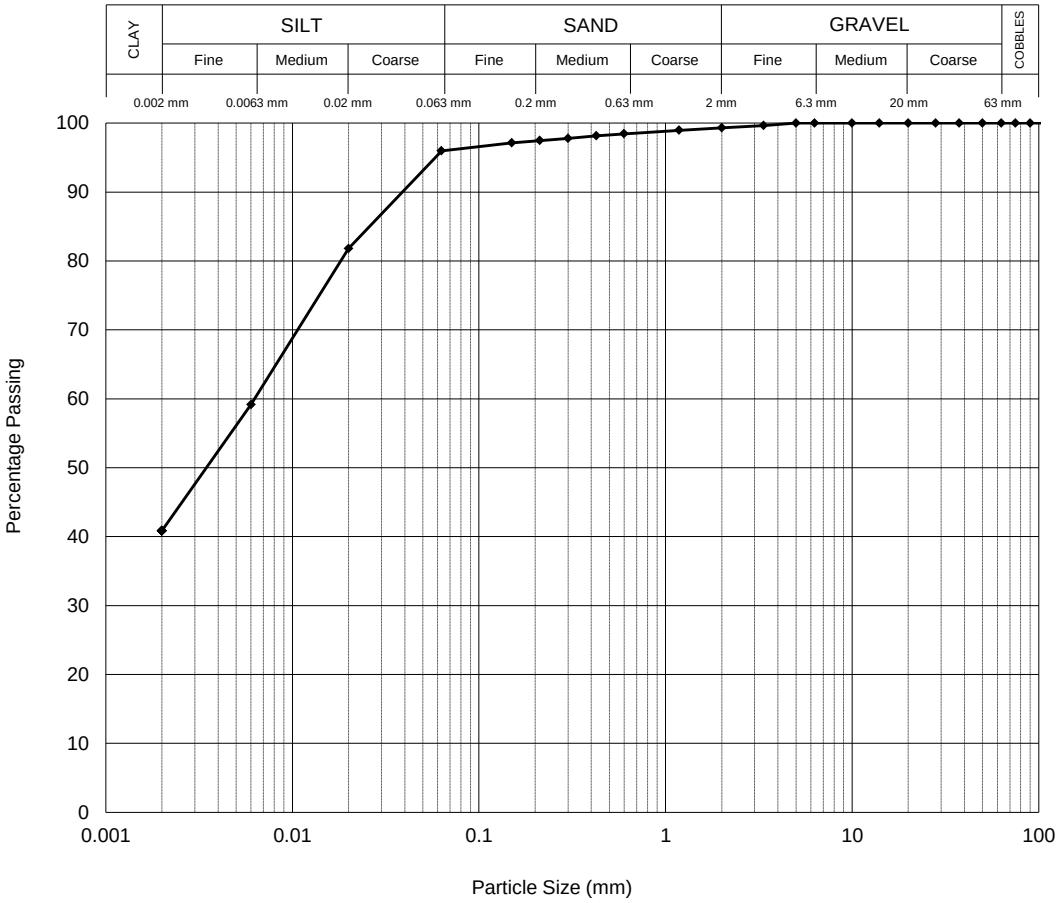
BH / TP No.	GT2
Sample Ref	C2L7
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	82
6 µm	59
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

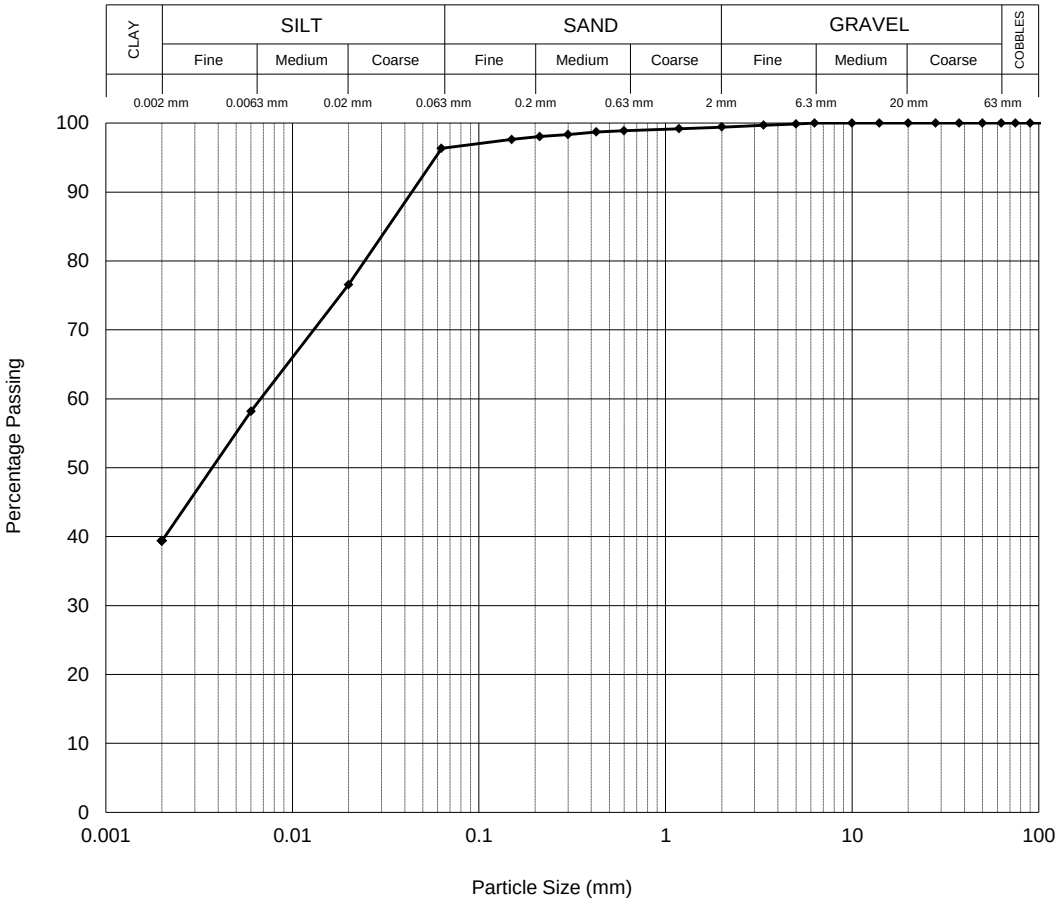
BH / TP No.	GT4
Sample Ref	D2L7
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	77
6 µm	58
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	57
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	46	20	26		
B4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	46	21	25		
C3 L3	GT8	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.7	100	47	21	26		
C4 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	49	20	29		
C5 L3	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13211

Number of samples submitted for testing:	8	sample (s)
Natural Moisture Content	5	test(s)
Atterberg Limit	5	test(s)
Particle Density	3	test(s)
Grading	3	test(s)
Date (s) sampled and received at laboratory:	22	Aug-18
Date of receipt of testing instructions	22	Aug-18
Date testing started:	23	Aug-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.6	100	46	20	26		
B4 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	46	21	25		
C3 L3	GT8	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.7	100	47	21	26		
C4 L3	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	49	20	29		
C5 L3	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		B3L3	B	Dark grey silty CLAY	2.68	2
GT4		B4L3	B	Dark grey silty CLAY with rare pyrite	2.70	2
GT6		C3L3	B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

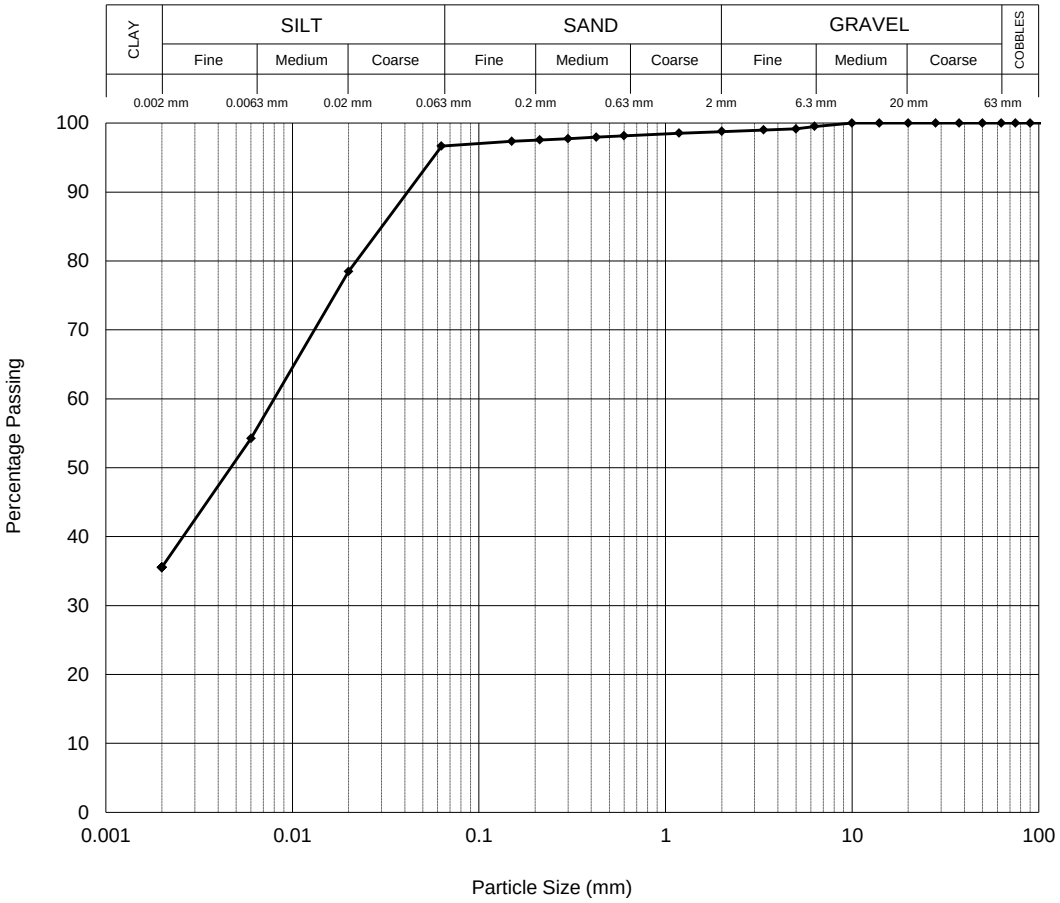
BH / TP No.	GT2
Sample Ref	B3L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	54
2 µm	36

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	61
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

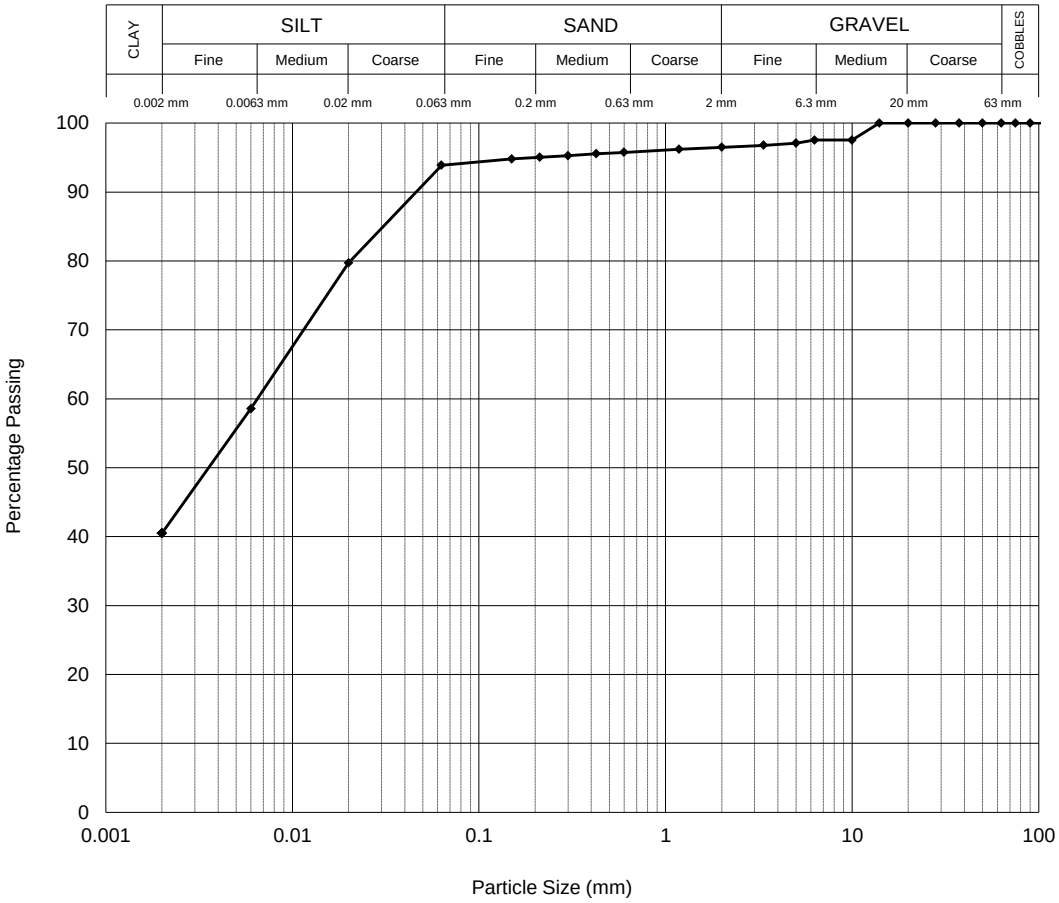
BH / TP No.	GT4
Sample Ref	B4L3
Sample Type	B

Description

Dark grey silty CLAY with rare pyrite

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	97
3.35 mm	97
2.00 mm	97
1.18 mm	96
600 µm	96
425 µm	96
300 µm	95
212 µm	95
150 µm	95
63 µm	94



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	59
2 µm	40
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	3
Sand	3
Silt	53
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

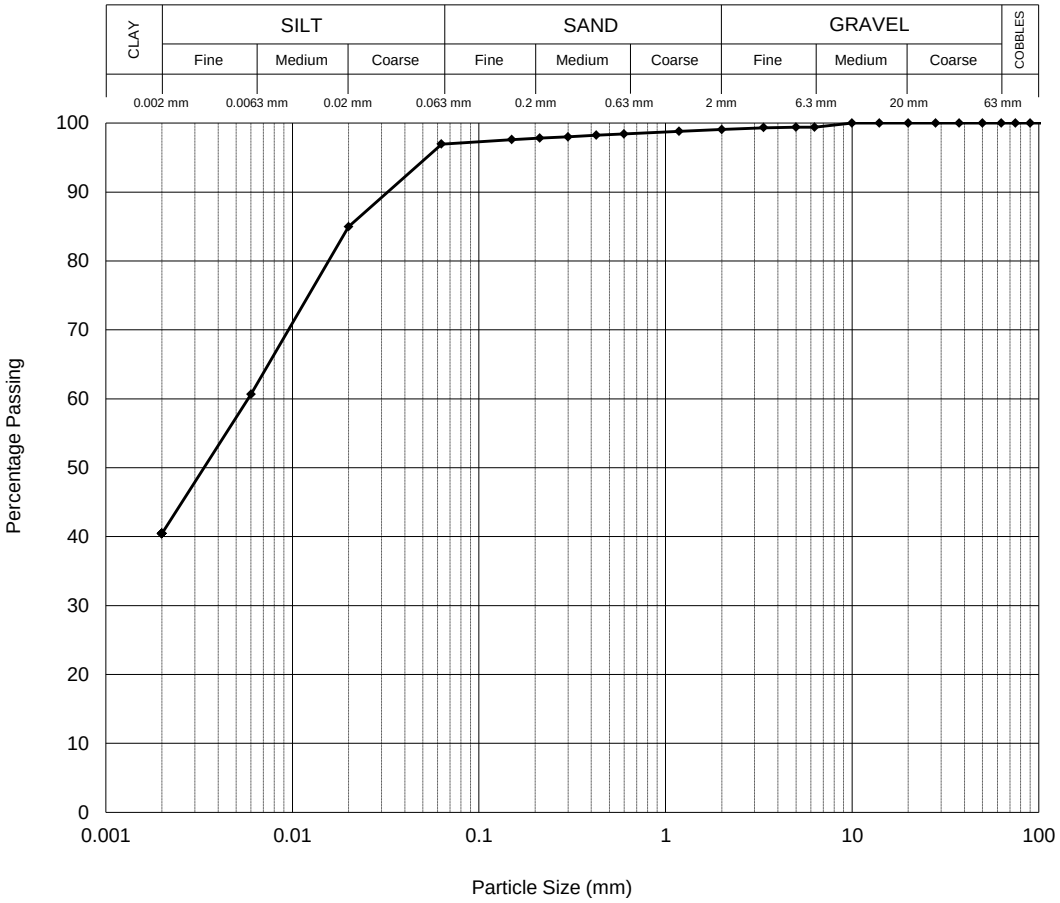
BH / TP No.	GT6
Sample Ref	C3L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28009

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B2 L8	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	45	20	25		
C4 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.4	100	46	21	25		
C5 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13215

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	23	Aug-18
Date of receipt of testing instructions	23	Aug-18
Date testing started:	24	Aug-18
Date of issue:	11	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B2 L8	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	45	20	25		
C4 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.4	100	46	21	25		
C5 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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1128 - Particle Density Summary - 28011.XLSM

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		B2L8	B	Dark grey silty CLAY	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

GL:Version 1.00 - 30/12/1899

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28011

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

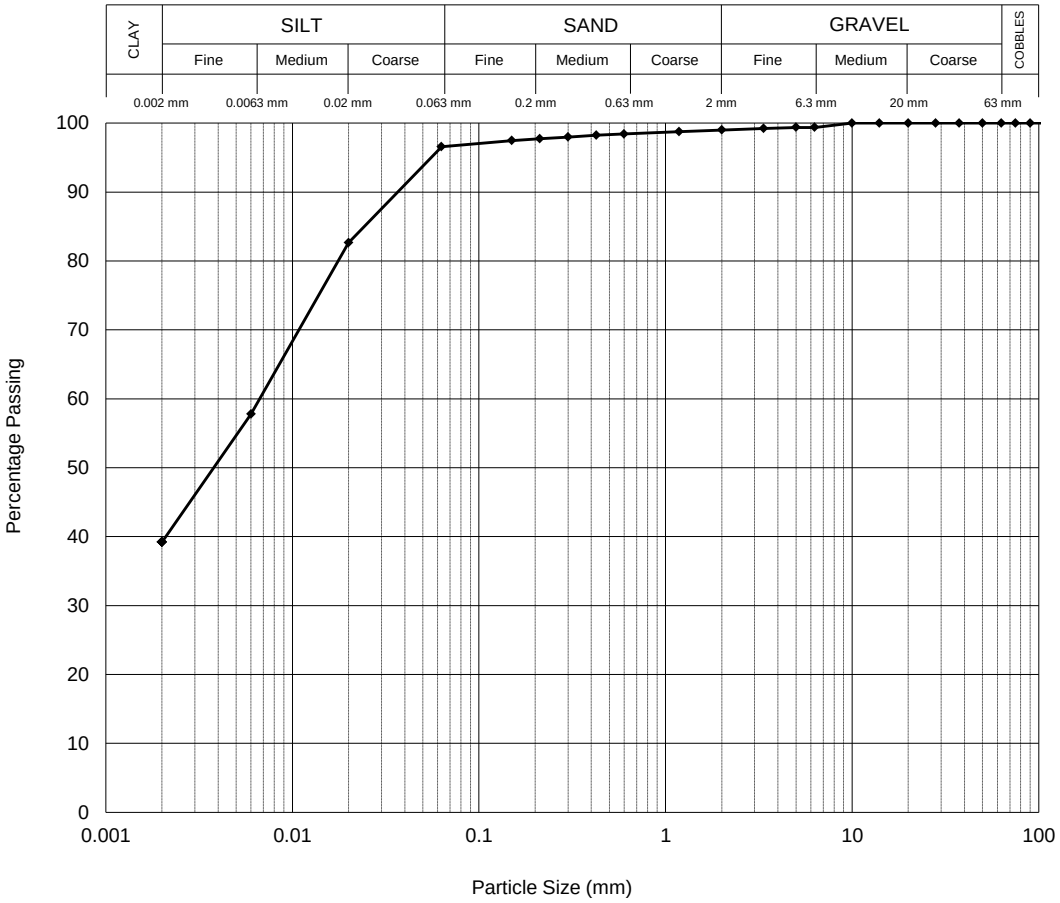
BH / TP No.	GT2
Sample Ref	B2L8
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	58
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28011

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B2 L9	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.7	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13219

cjassociates

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	1	test(s)
Atterberg Limit	1	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	24	Aug-18
Date of receipt of testing instructions	24	Aug-18
Date testing started:	24	Aug-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B2 L9	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.7	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		B2L9	B	Dark grey silty CLAY	2.68	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28010

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

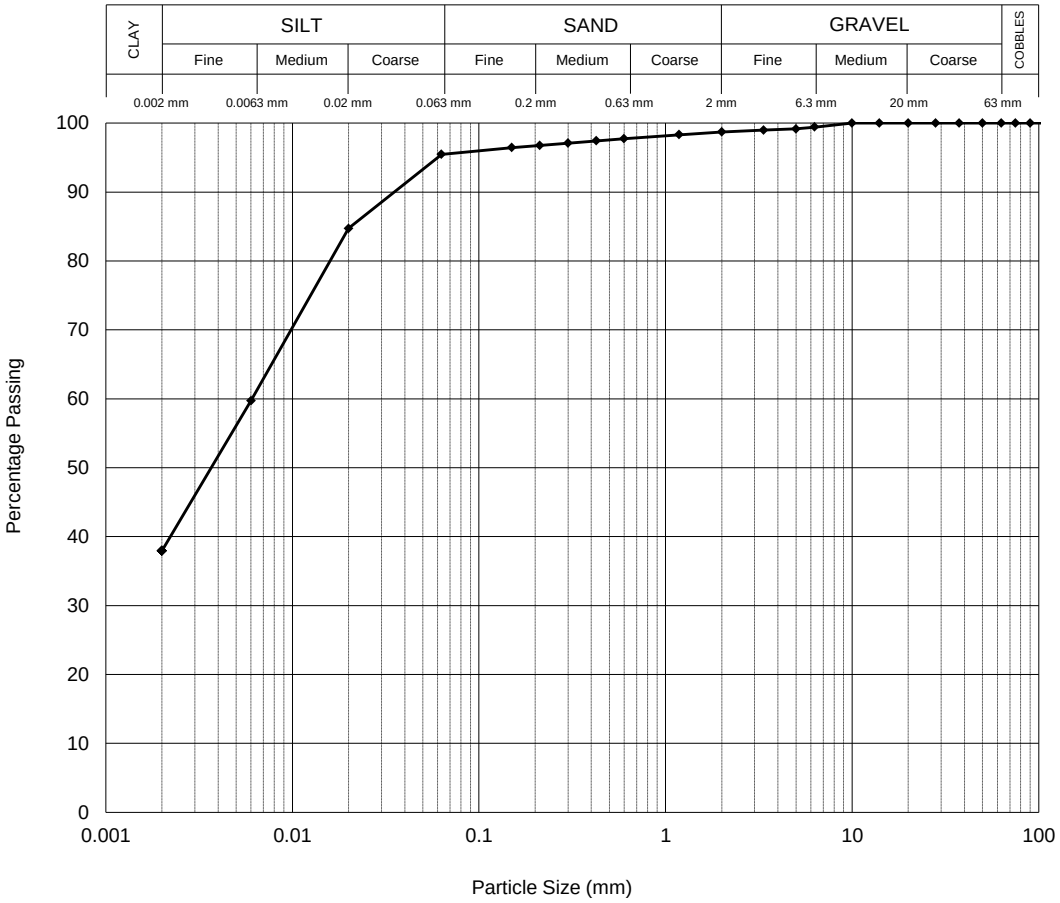
BH / TP No.	GT2
Sample Ref	B2L9
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	97
300 µm	97
212 µm	97
150 µm	96
63 µm	95



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	60
2 µm	38
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	58
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28010

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13226

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Date (s) sampled and received at laboratory:	29	Aug-18
Date of receipt of testing instructions	29	Aug-18
Date testing started:	30	Aug-18
Date of issue:	15	Sep-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C2 L8	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.7	100	45	21	24		
D5 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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		sheet 1

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C3 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			16.3	100	48	22	26		
D4 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	45	20	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
C3L4		GT2	B	Dark grey silty CLAY.	2.70	2
D4L2		GT4	B	Dark grey silty CLAY	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

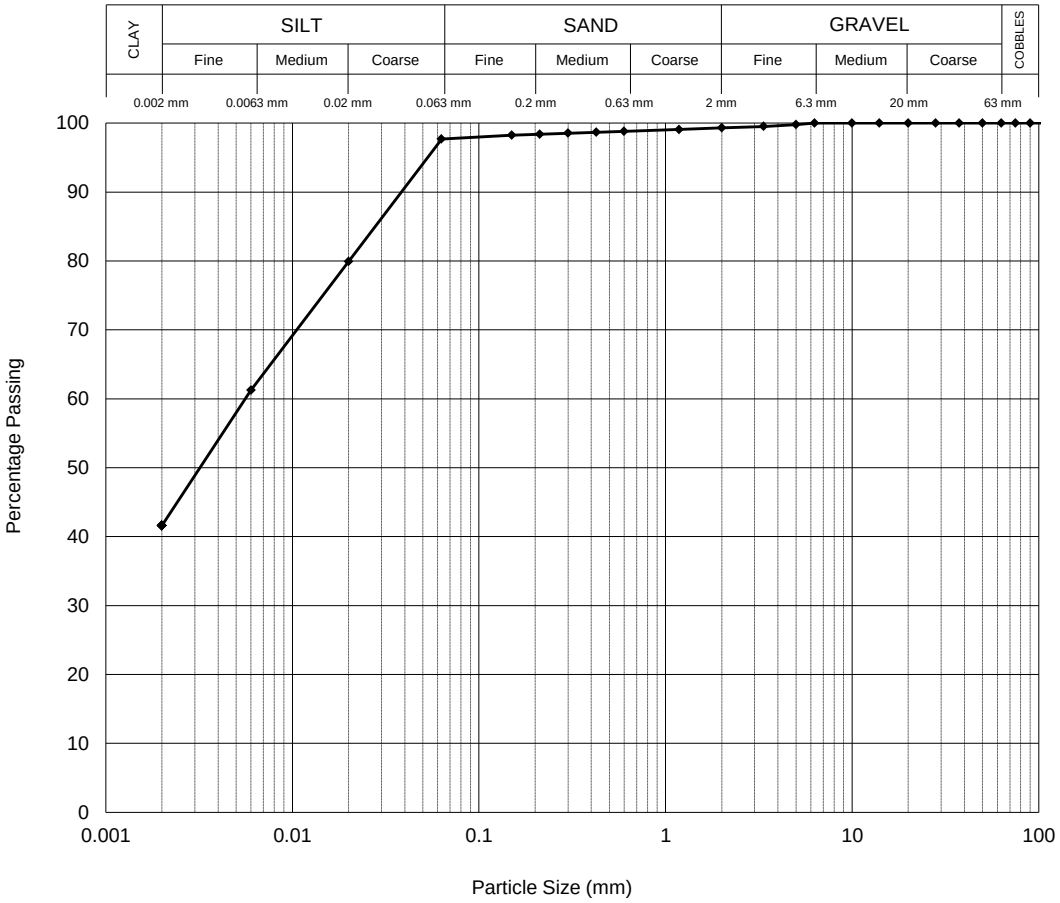
BH / TP No.	C3L4
Sample Ref	GT2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	61
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

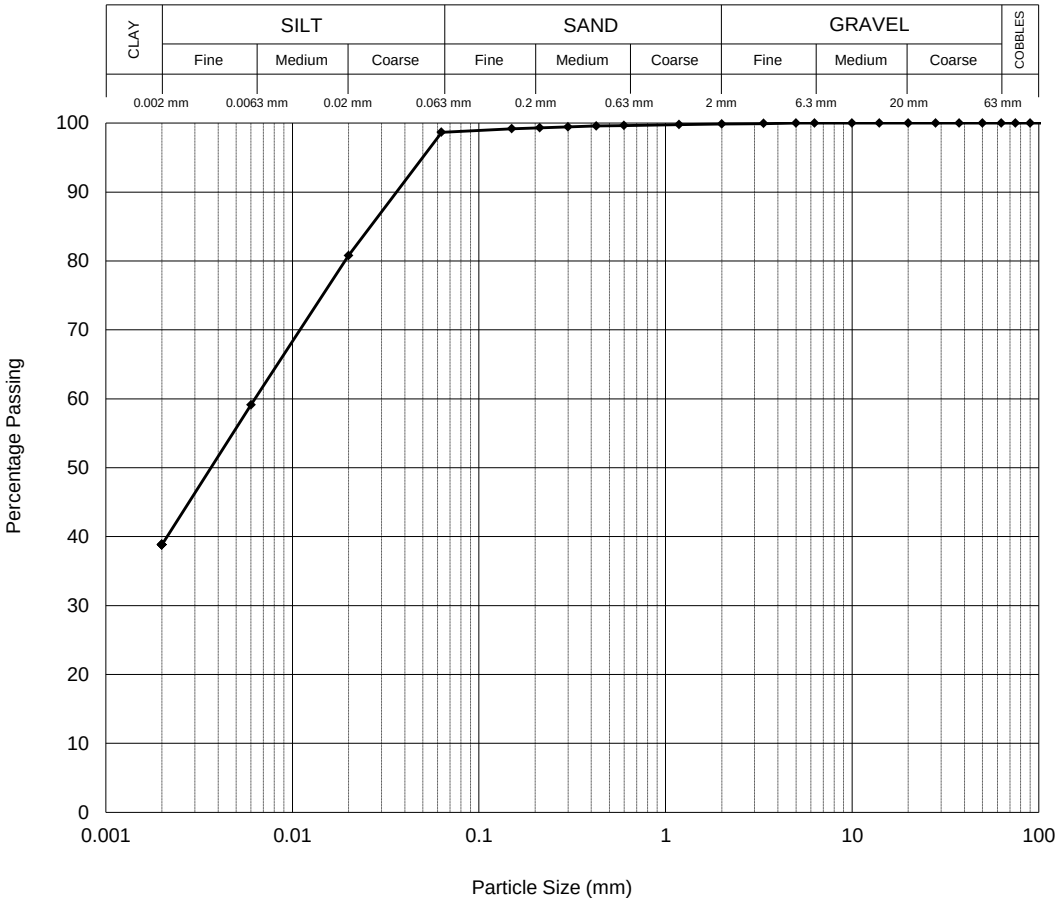
BH / TP No.	D4L2
Sample Ref	GT4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	59
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	60
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C3 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			16.3	100	48	22	26		
D4 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	45	20	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D3 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13235

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	1	test(s)
Atterberg Limit	1	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	3	Sep-18
Date of receipt of testing instructions	3	Sep-18
Date testing started:	5	Sep-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	w	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D3 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.9	100	46	20	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
D3L2		GT2	B	Dark grey silty CLAY	2.67	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28029

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

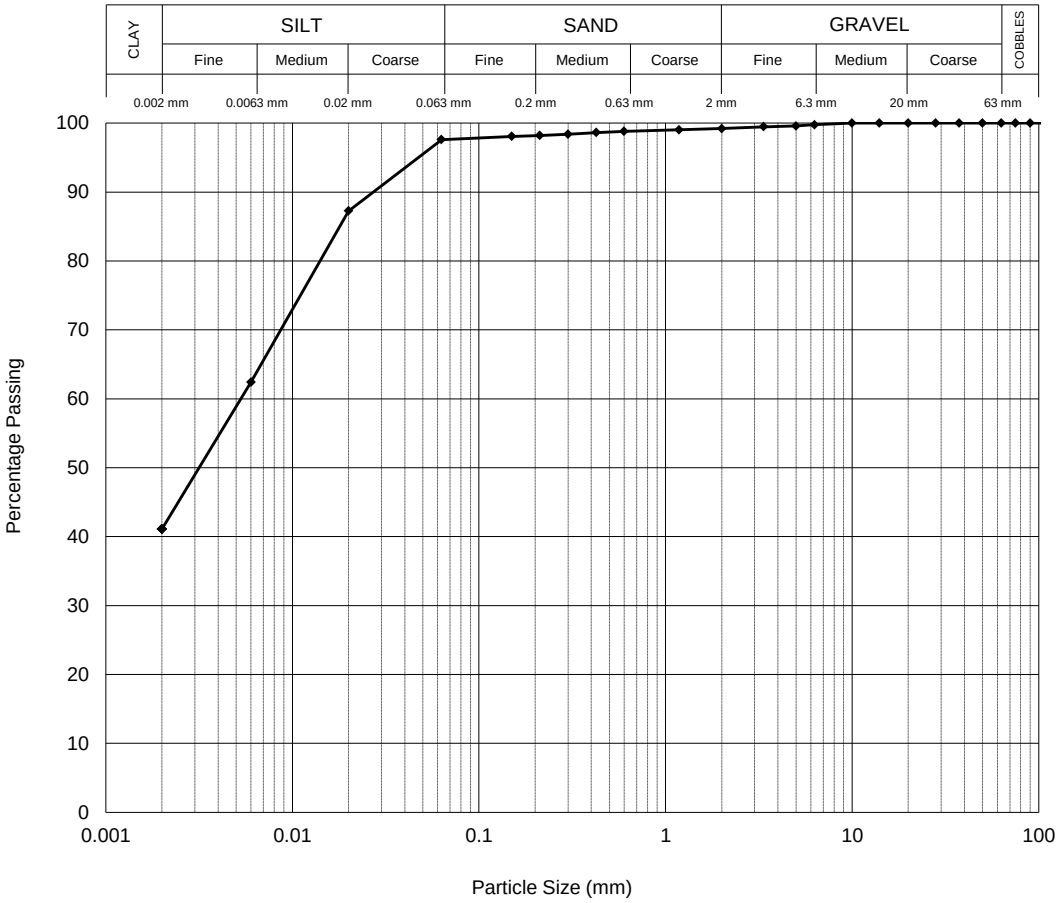
BH / TP No.	D3L2
Sample Ref	GT2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	62
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28029

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B1 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	48	21	27		
B2 L10	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	46	20	26		
C2 L9	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.6	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13239

Number of samples submitted for testing:	4	sample (s)

Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)

Date (s) sampled and received at laboratory:	5	Sep-18
Date of receipt of testing instructions	5	Sep-18
Date testing started:	6	Sep-18
Date of issue:	1	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
K Maid
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B1 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.2	100	48	21	27		
B2 L10	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	46	20	26		
C2 L9	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.6	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
C2L9		GT4	B	Dark grey silty CLAY	2.64	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28030

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

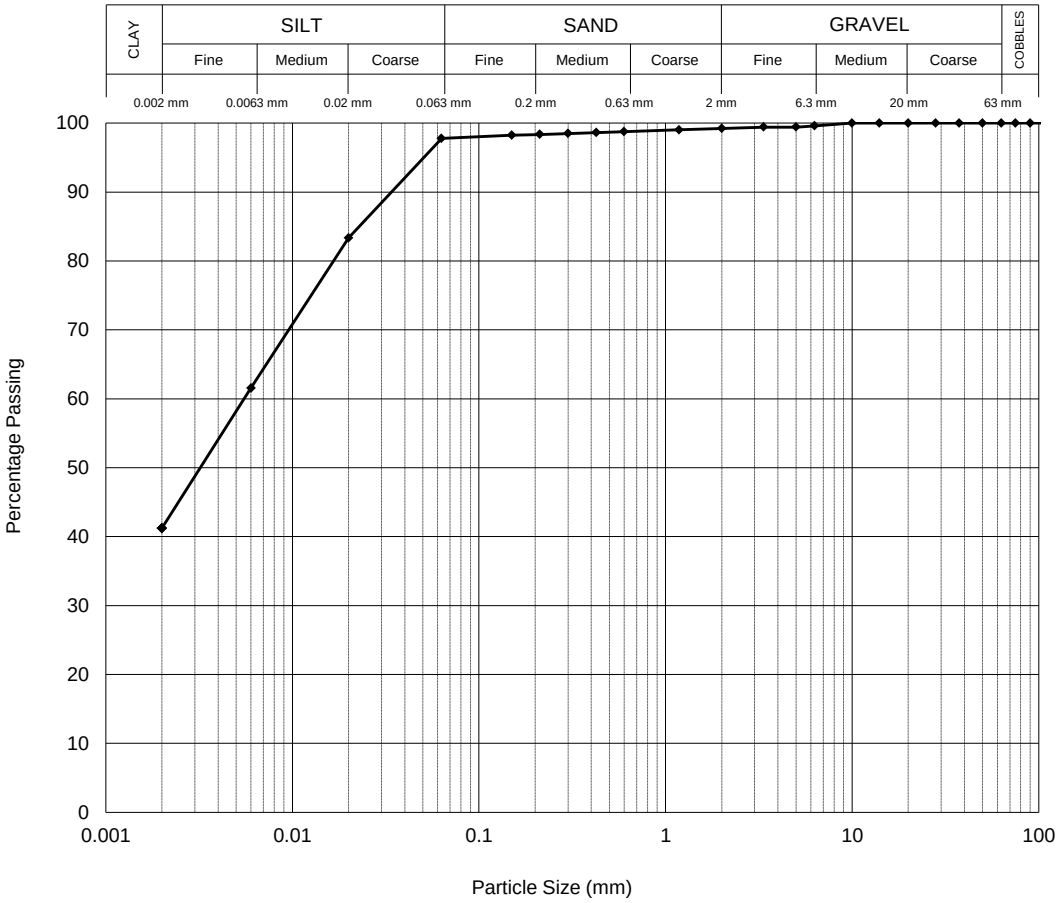
BH / TP No.	C2L9
Sample Ref	GT4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	62
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	57
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/09/2018

Project Number:

GEO / 28030

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D2 L8	GT1	0.00		B	Dark grey slightly sandy CLAY			21.4	100	51	22	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
D2L8		GT2	B	Dark grey very clayey SILT.	2.63	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

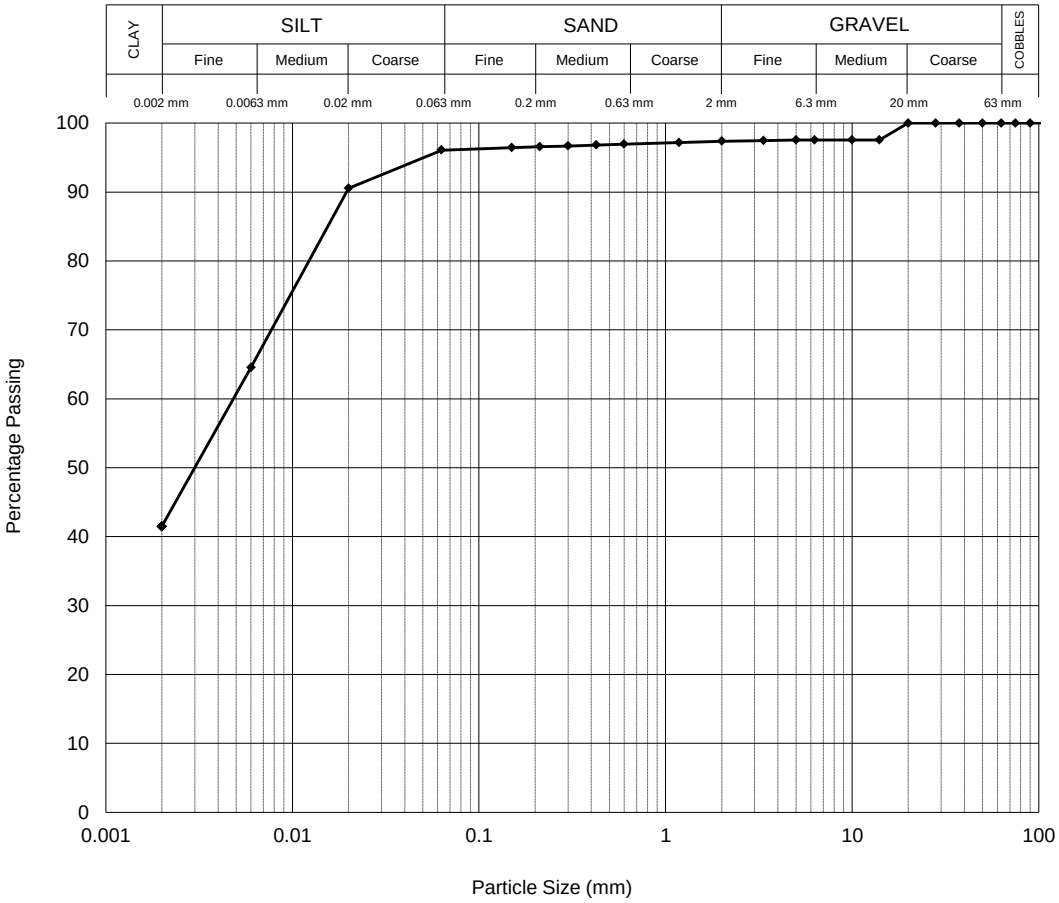
BH / TP No.	D2L8
Sample Ref	GT2
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	98
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	97
2.00 mm	97
1.18 mm	97
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	96
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	91
6 µm	65
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	3
Sand	1
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13245

Number of samples submitted for testing:	3	sample (s)
Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	7	Sep-18
Date of receipt of testing instructions	7	Sep-18
Date testing started:	11	Sep-18
Date of issue:	3	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D3 L3	GT1	0.00		B	Dark grey slightly sandy CLAY			20.3	100	51	21	30		
D4 L3	GT3	0.00		B	Dark grey slightly sandy CLAY			21.3	100	50	22	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D3 L3	B	Dark grey clayey SILT.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
27/09/2018

Project Number:

GEO / 28054

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

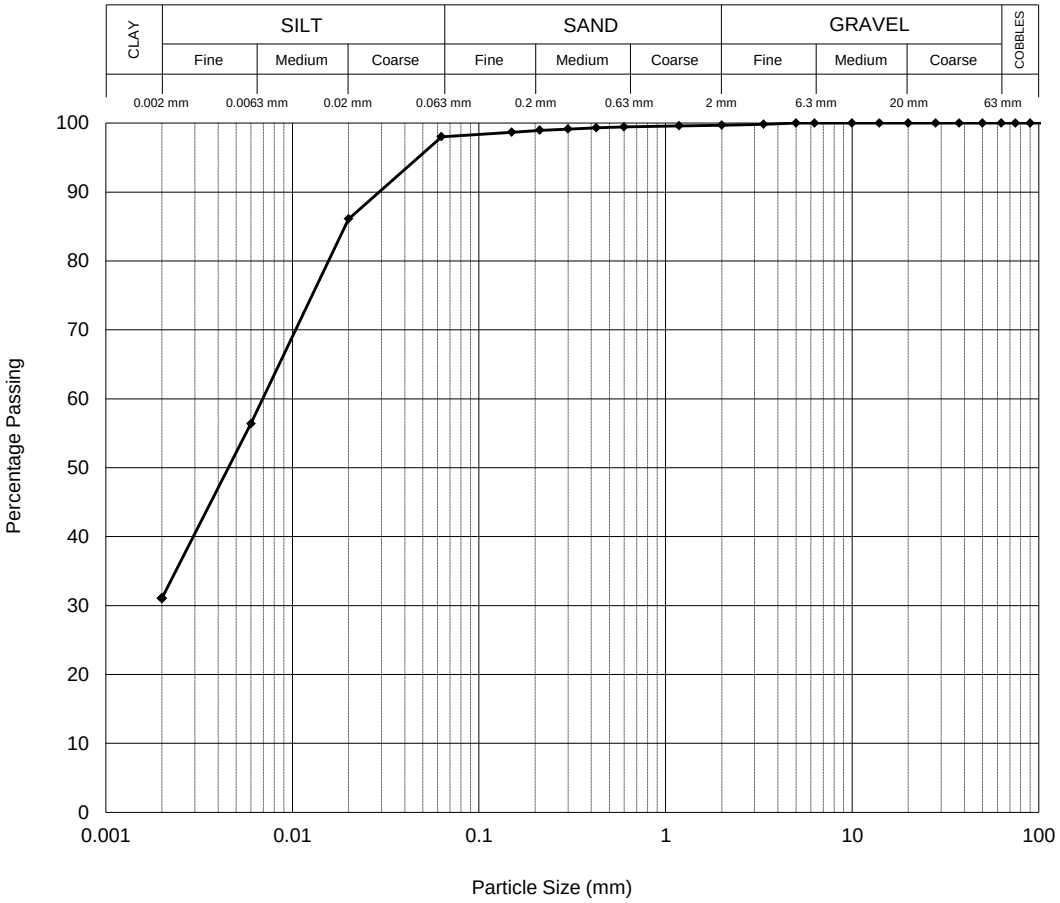
BH / TP No.	GT2
Sample Ref	D3 L3
Sample Type	B

Description

Dark grey clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	56
2 µm	31

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	67
Clay	31

Checked and Approved by

S Burke

S Burke - Senior Technician
27/09/2018

Project Number:

GEO / 28054

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 L4	GT4	0.00		B	Dark grey slightly sandy CLAY			20.7	100	49	22	27		
B4 L4	GT2	0.00		B	Dark grey slightly sandy CLAY			21.4	100	47	21	26		
D2 L9	GT1	0.00		B	Dark grey slightly sandy CLAY			21.5	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13251

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	12	Sep-18
Date of receipt of testing instructions	12	Sep-18
Date testing started:	13	Sep-18
Date of issue:	3	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 L4	GT4	0.00		B	Dark grey slightly sandy CLAY			20.7	100	49	22	27		
B4 L4	GT2	0.00		B	Dark grey slightly sandy CLAY			21.4	100	47	21	26		
D2 L9	GT1	0.00		B	Dark grey slightly sandy CLAY			21.5	100	49	22	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D2 L9	B	Dark grey clayey SILT.	2.65	2
GT5		B3 L4	B	Dark grey clayey SILT.	2.65	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
28/09/2018

Project Number:

GEO / 28053

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

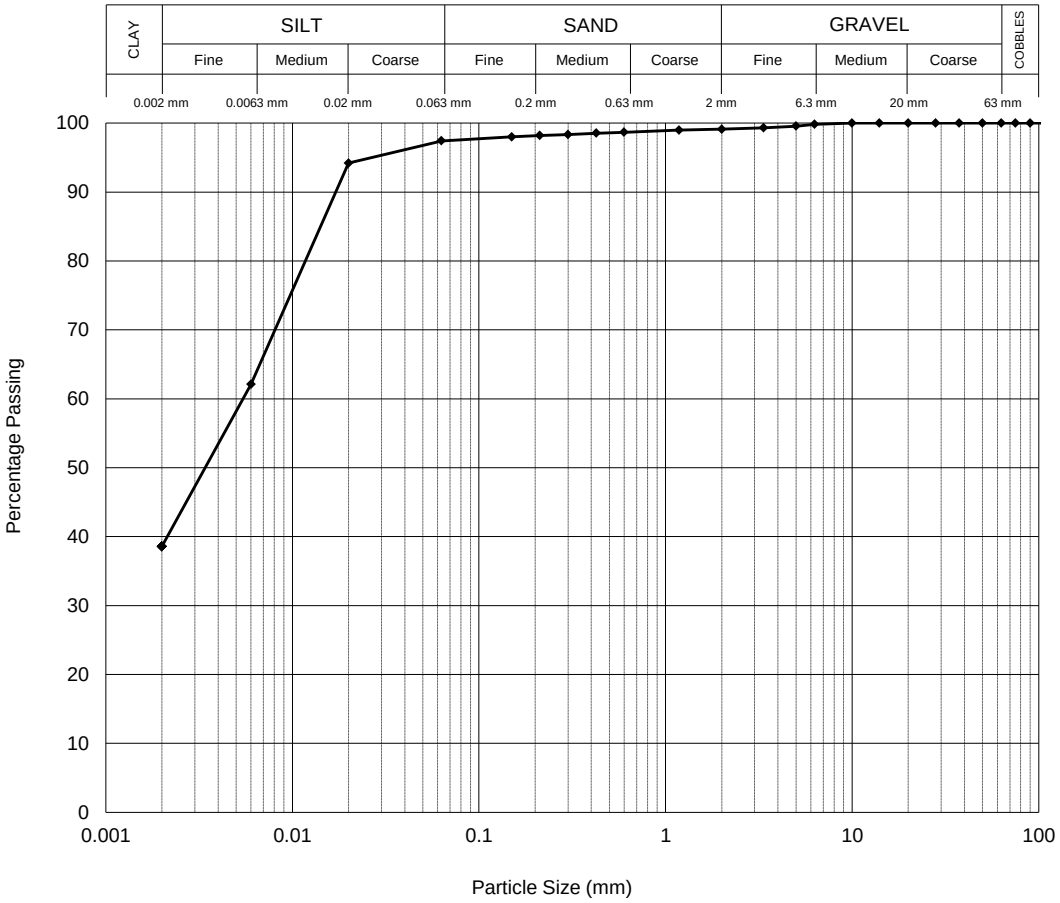
BH / TP No.	GT2
Sample Ref	D2 L9
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	94
6 µm	62
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	59
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
28/09/2018

Project Number:

GEO / 28053

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

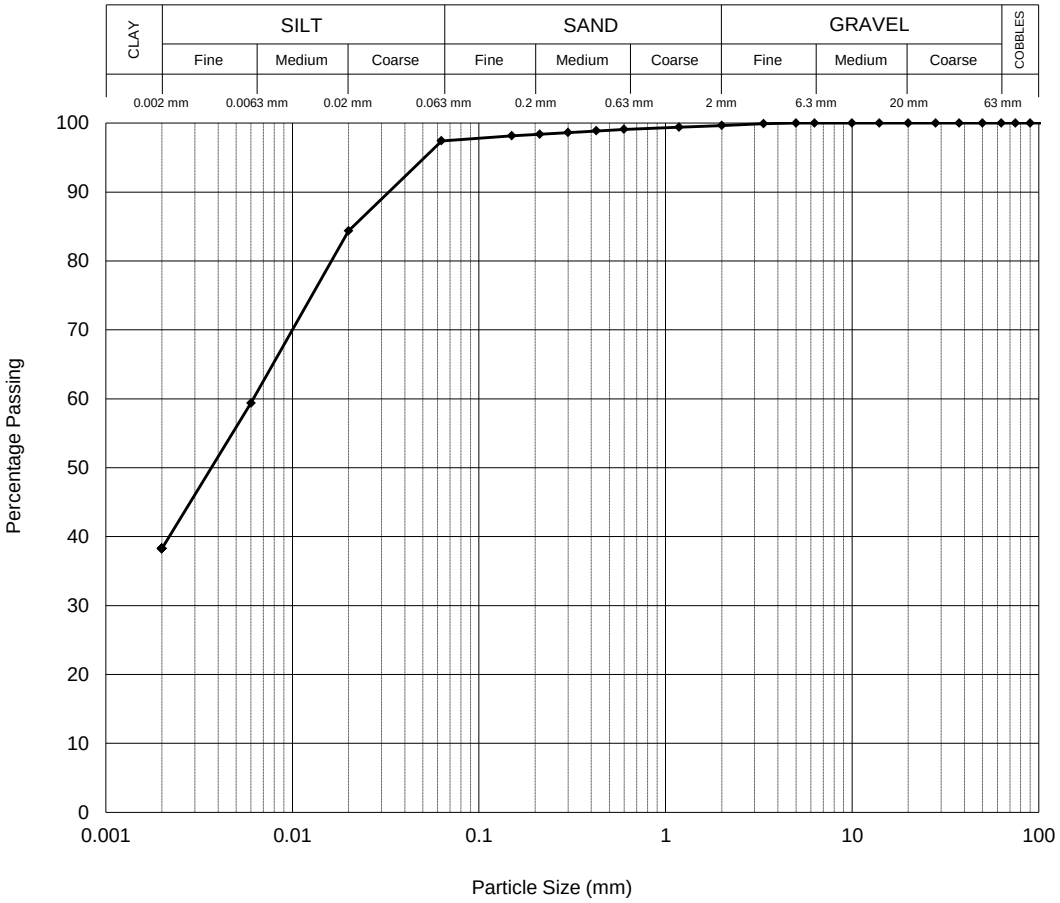
BH / TP No.	GT5
Sample Ref	B3 L4
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	59
2 µm	38
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	59
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
28/09/2018

Project Number:

GEO / 28053

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C3 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			20.7	100	50	22	28		
C4 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			21.2	100	49	22	27		
C5 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			20.9	100	50	21	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C3 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			20.7	100	50	22	28		
C4 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			21.2	100	49	22	27		
C5 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			20.9	100	50	21	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
C4L5		GT2	B	Dark grey CLAY and SILT.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28072

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

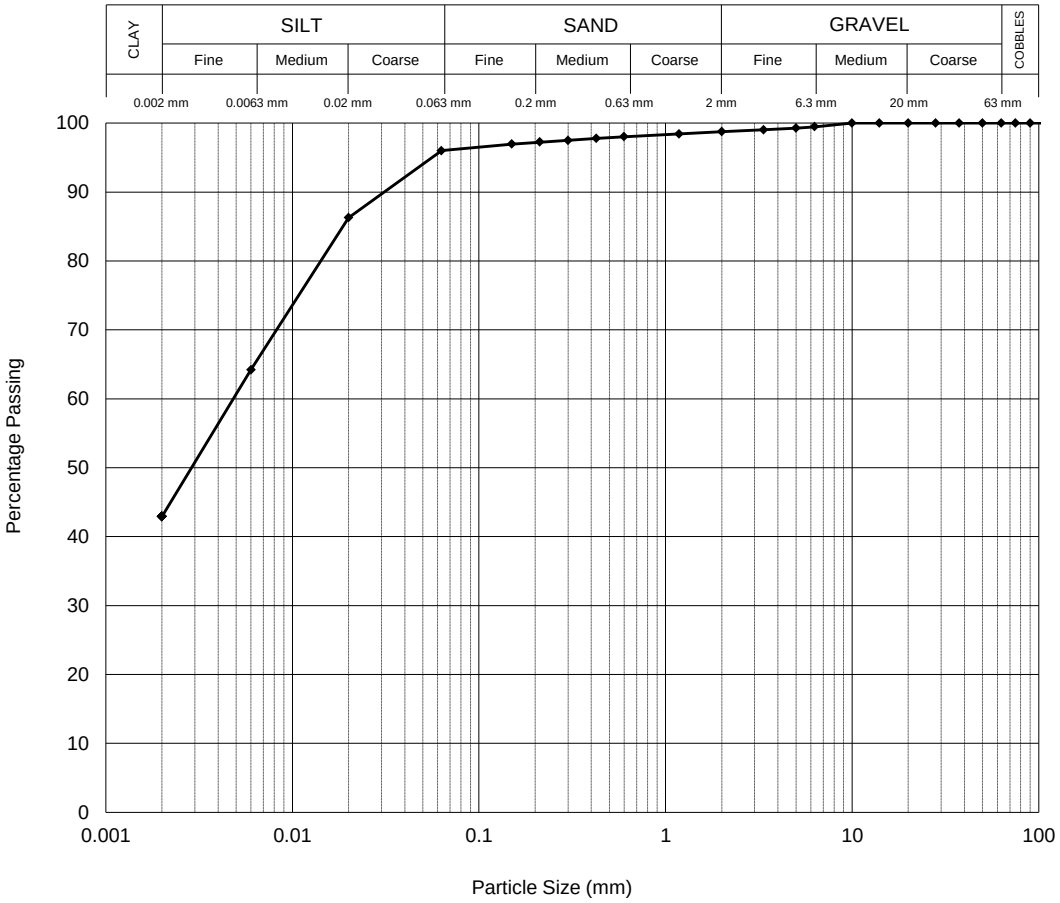
BH / TP No.	C4L5
Sample Ref	GT2
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	64
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	53
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28072

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D3 L4	GT1	0.00		B	Dark grey slightly sandy CLAY			21.8	100	47	20	27		
D4 L4	GT3	0.00		B	Dark grey slightly sandy CLAY			22.0	100	48	21	27		
D5 L3	GT4	0.00		B	Dark grey slightly sandy CLAY			21.4	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13258

Number of samples submitted for testing:	4	sample (s)
Natural Moisture Content	3	test(s)
Atterberg Limit	3	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	17	Sep-18
Date of receipt of testing instructions	17	Sep-18
Date testing started:	18	Sep-18
Date of issue:	11	Oct-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D3 L4	GT1	0.00		B	Dark grey slightly sandy CLAY			21.8	100	47	20	27		
D4 L4	GT3	0.00		B	Dark grey slightly sandy CLAY			22.0	100	48	21	27		
D5 L3	GT4	0.00		B	Dark grey slightly sandy CLAY			21.4	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
D3L4		GT2	B	Dark grey clayey SILT.	2.68	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
09/10/2018

Project Number:

GEO / 28073

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1539074724)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

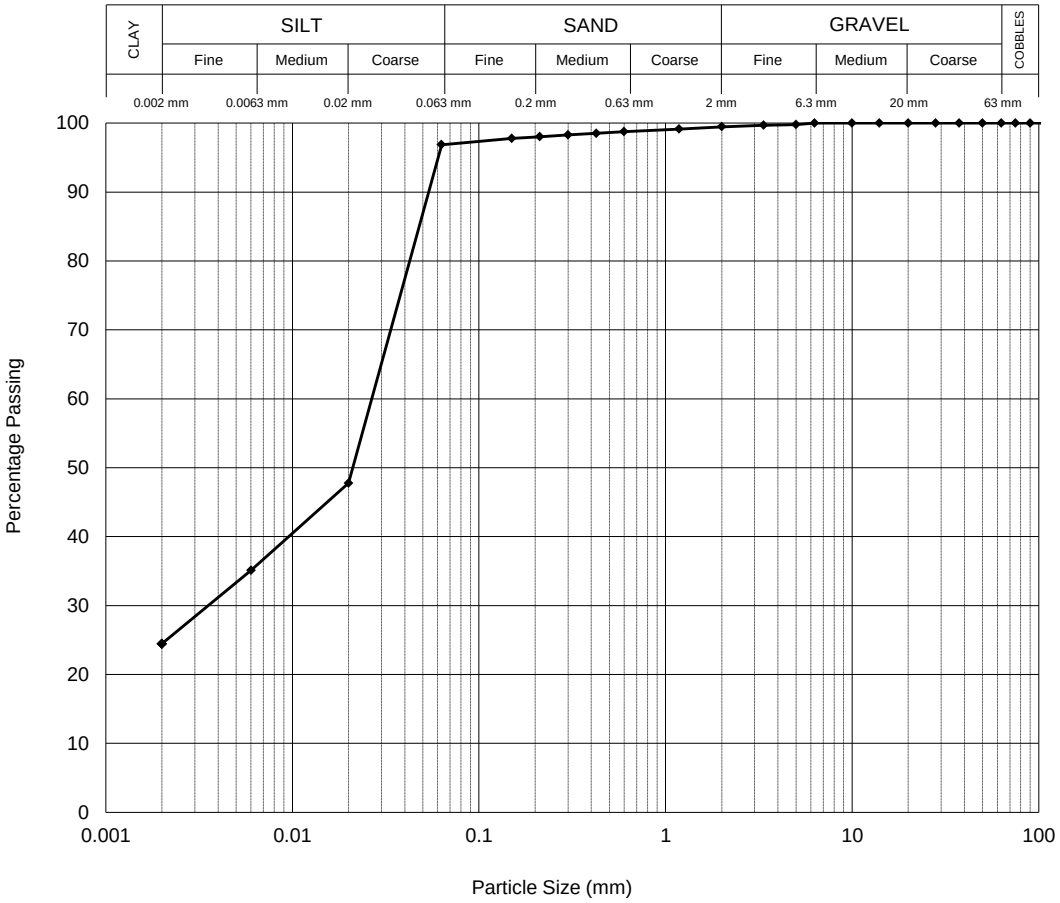
BH / TP No.	D3L4
Sample Ref	GT2
Sample Type	B

Description

Dark grey clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	48
6 µm	35
2 µm	24
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	72
Clay	24

Checked and Approved by

S Burke

S Burke - Senior Technician
09/10/2018

Project Number:

GEO / 28073

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B3 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			21.8	100	48	21	27		
B4 L5	GT5	0.00		B	Dark grey slightly sandy CLAY			21.8	100	48	21	27		
D3 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			22.6	100	48	22	26		
D4 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			22.3	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13264

Number of samples submitted for testing:	5	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	19	Sep-18
Date of receipt of testing instructions	19	Sep-18
Date testing started:	24	Sep-18
Date of issue:	1	Nov-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B3 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			21.8	100	48	21	27		
B4 L5	GT5	0.00		B	Dark grey slightly sandy CLAY			21.8	100	48	21	27		
D3 L5	GT3	0.00		B	Dark grey slightly sandy CLAY			22.6	100	48	22	26		
D4 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			22.3	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT4		B4-L5	B	Dark grey CLAY and SILT with rare fossil fragments.	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
31/10/2018

Project Number:

GEO / 28155

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

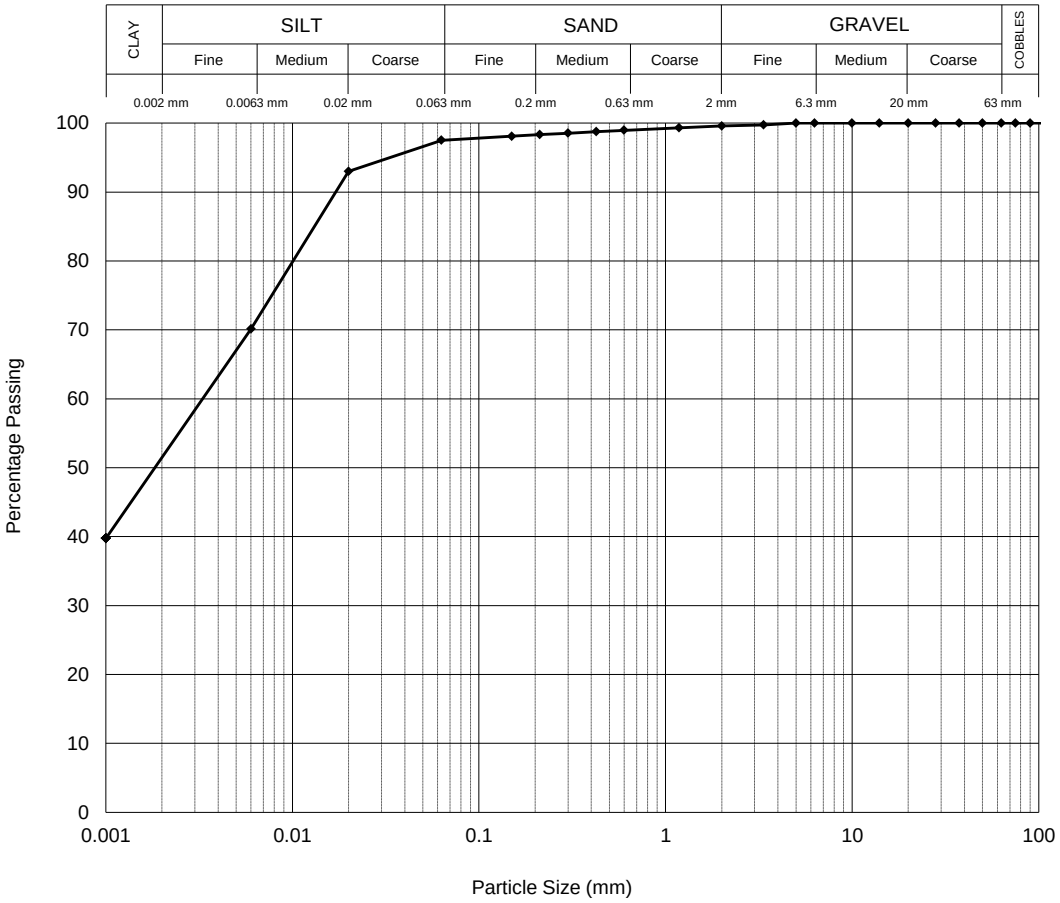
BH / TP No.	GT4
Sample Ref	B4-L5
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	93
6 µm	70
1 µm	40
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	52
Clay	46

Checked and Approved by

S Burke

S Burke - Senior Technician
31/10/2018

Project Number:

GEO / 28155

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D5 L5	GT1	0.00		B	Grey slightly gravelly slightly sandy CLAY			20.0	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13282

Number of samples submitted for testing:	2	sample (s)
Natural Moisture Content	1	test(s)
Atterberg Limit	1	test(s)
Particle Density	1	test(s)
Grading	1	test(s)
Date (s) sampled and received at laboratory:	27	Sep-18
Date of receipt of testing instructions	27	Sep-18
Date testing started:	28	Sep-18
Date of issue:	1	Nov-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
D5 L5	GT1	0.00		B	Grey slightly gravelly slightly sandy CLAY			20.0	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test | Liquid Limit | Particle density
Linear measurement unless : | 4pt cone unless : | sp - small pyknometer
wd - water displacement | cas - Casagrande method | gj - gas jar
wi - immersion in water | 1pt - single point test

Date Printed	Approved By	Table
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BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D5L5	B	Dark grey very clayey SILT with rare fossil fragments.	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
31/10/2018

Project Number:

GEO / 28154

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

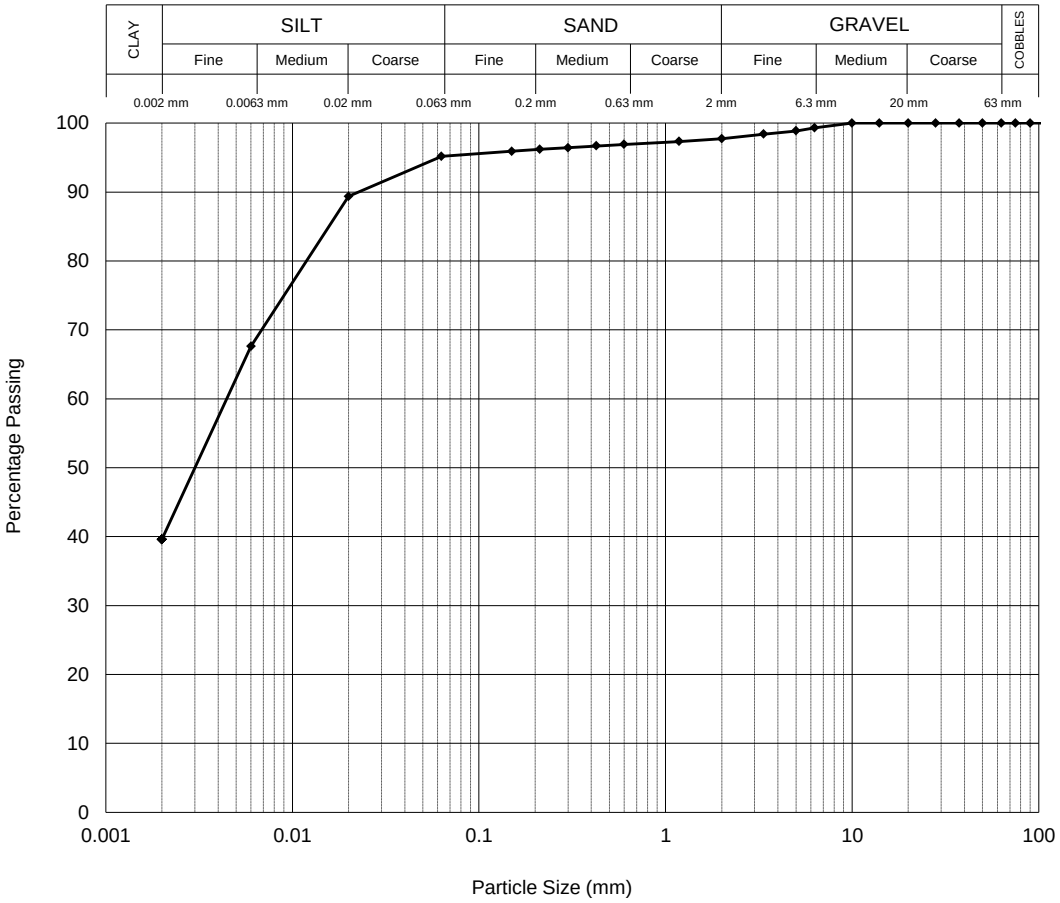
BH / TP No.	GT2
Sample Ref	D5L5
Sample Type	B

Description

Dark grey very clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	98
2.00 mm	98
1.18 mm	97
600 µm	97
425 µm	97
300 µm	96
212 µm	96
150 µm	96
63 µm	95



Sedimentation	
Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	68
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	2
Sand	3
Silt	56
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
31/10/2018

Project Number:

GEO / 28154

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B1 L5	GT1	0.00		B	Grey slightly sandy GRAVEL			19.9	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/10/2018	Lisa Maiden	1
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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B3 B1	GT2	0.00		B	Grey slightly sandy CLAY			20.5	100	47	22	25		
G5 B1	GT1	0.00		B	Grey slightly sandy CLAY			19.8	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
18/10/2018	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13301

Number of samples submitted for testing:	3	sample (s)

Natural Moisture Content	2	test(s)
Atterberg Limit	2	test(s)
Particle Density	1	test(s)
Grading	1	test(s)

Date (s) sampled and received at laboratory:	5	Oct-18
Date of receipt of testing instructions	5	Oct-18
Date testing started:	8	Oct-18
Date of issue:	9	Nov-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B3 B1	GT2	0.00		B	Grey slightly sandy CLAY			20.5	100	47	22	25		
G5 B1	GT1	0.00		B	Grey slightly sandy CLAY			19.8	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		B3-B1	B	Dark grey SILT and CLAY.	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
05/11/2018

Project Number:

GEO / 28210

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

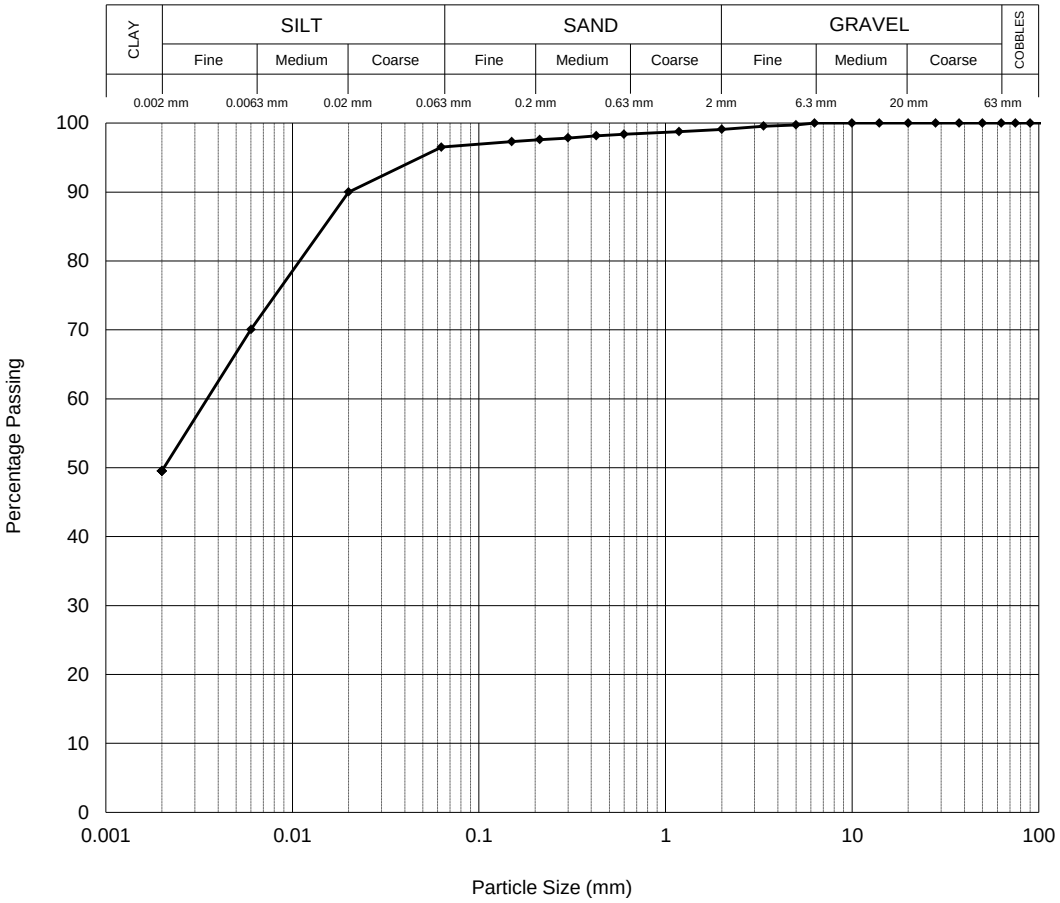
BH / TP No.	GT3
Sample Ref	B3-B1
Sample Type	B

Description

Dark grey SILT and CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	90
6 µm	70
2 µm	50
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	47
Clay	49

Checked and Approved by

S Burke

S Burke - Senior Technician
05/11/2018

Project Number:

GEO / 28210

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 B3	RA6	0.00		B	Grey slightly sandy CLAY			17.8	100	48	21	27		
C5 B2	RA1	0.00		B	Grey slightly sandy CLAY			18.6	100	47	21	26		
E5 B2	RA2	0.00		B	Grey slightly sandy CLAY			18.9	100	48	21	27		
E5 B3	RA5	0.00		B	Grey slightly sandy CLAY			18.1	91	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
18/10/2018	Lisa Maiden	1
		sheet 1

Laboratory Test Certificate

Site	Docks Way Cell 4
Client	Jim Davies Civil Engineering Ltd
F.A.O.	Andrew Miles
Address	Tygwyn Banalog Terrace Hollybush Blackwood NP12 0SG
Order Number	Email Andrew Miles
Job Number	AG0390
Lab Number	L13306

cjassociates

Number of samples submitted for testing:	6	sample (s)
Natural Moisture Content	4	test(s)
Atterberg Limit	4	test(s)
Particle Density	2	test(s)
Grading	2	test(s)
Date (s) sampled and received at laboratory:	10	Oct-18
Date of receipt of testing instructions	10	Oct-18
Date testing started:	10	Oct-18
Date of issue:	9	Nov-18

Please note that we will keep the sample (s) for one month after submission of our report and will then dispose of them without notice unless you ask us to store them. We will then make a separate charge for this.

UKAS TESTING
1429

Approved by :
Lisa Maiden

C.J. Associates Geotechnical Ltd
King Road Avenue
Avonmouth - Bristol BS11 9HF
Tel: 0117 982 1473 Fax: 0117 982 8200

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
B3 B3	RA6	0.00		B	Grey slightly sandy CLAY			17.8	100	48	21	27		
C5 B2	RA1	0.00		B	Grey slightly sandy CLAY			18.6	100	47	21	26		
E5 B2	RA2	0.00		B	Grey slightly sandy CLAY			18.9	100	48	21	27		
E5 B3	RA5	0.00		B	Grey slightly sandy CLAY			18.1	91	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
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		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
RA3		C5-B2	B	Dark grey SILT and CLAY	2.73	2
RA4		E5-B3	B	Dark grey SILT and CLAY	2.71	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
05/11/2018

Project Number:

GEO / 28211

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1541429363)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

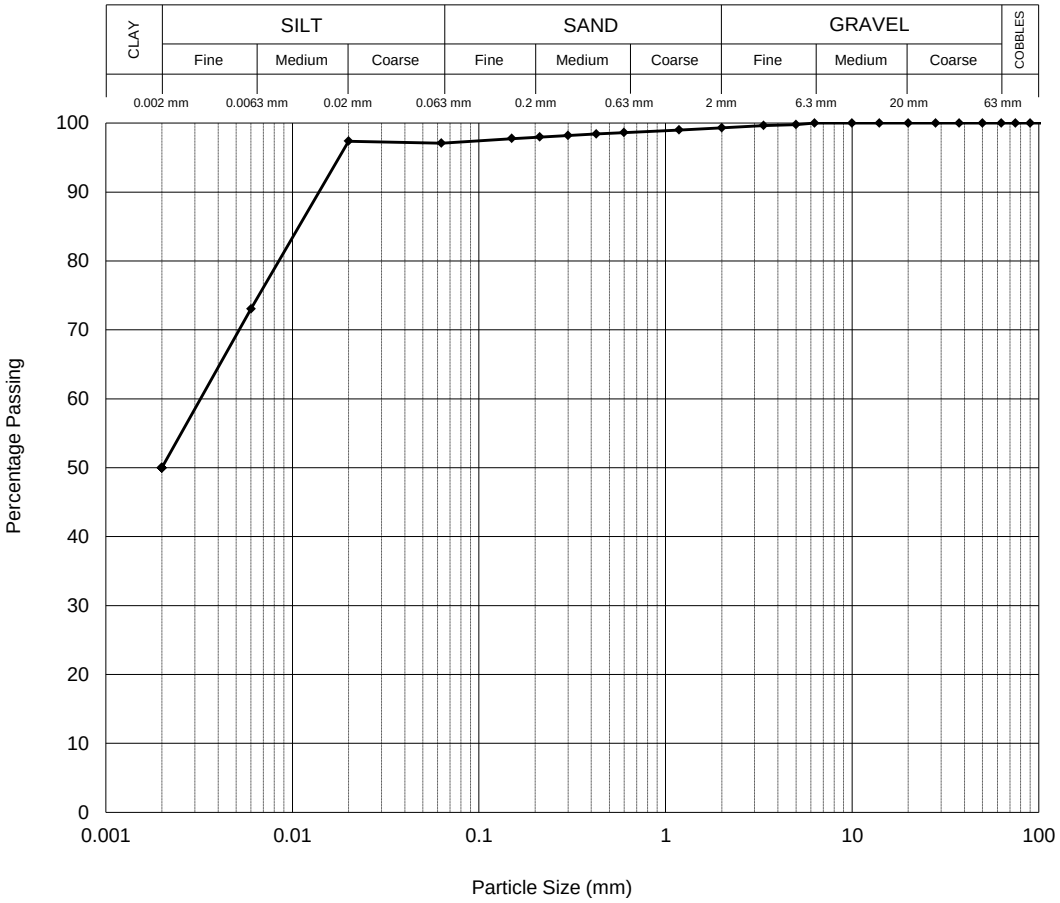
BH / TP No.	RA3
Sample Ref	C5-B2
Sample Type	B

Description

Dark grey SILT and CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	97
6 µm	73
2 µm	50

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	47
Clay	50

Checked and Approved by

S Burke

S Burke - Senior Technician
05/11/2018

Project Number:

GEO / 28211

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

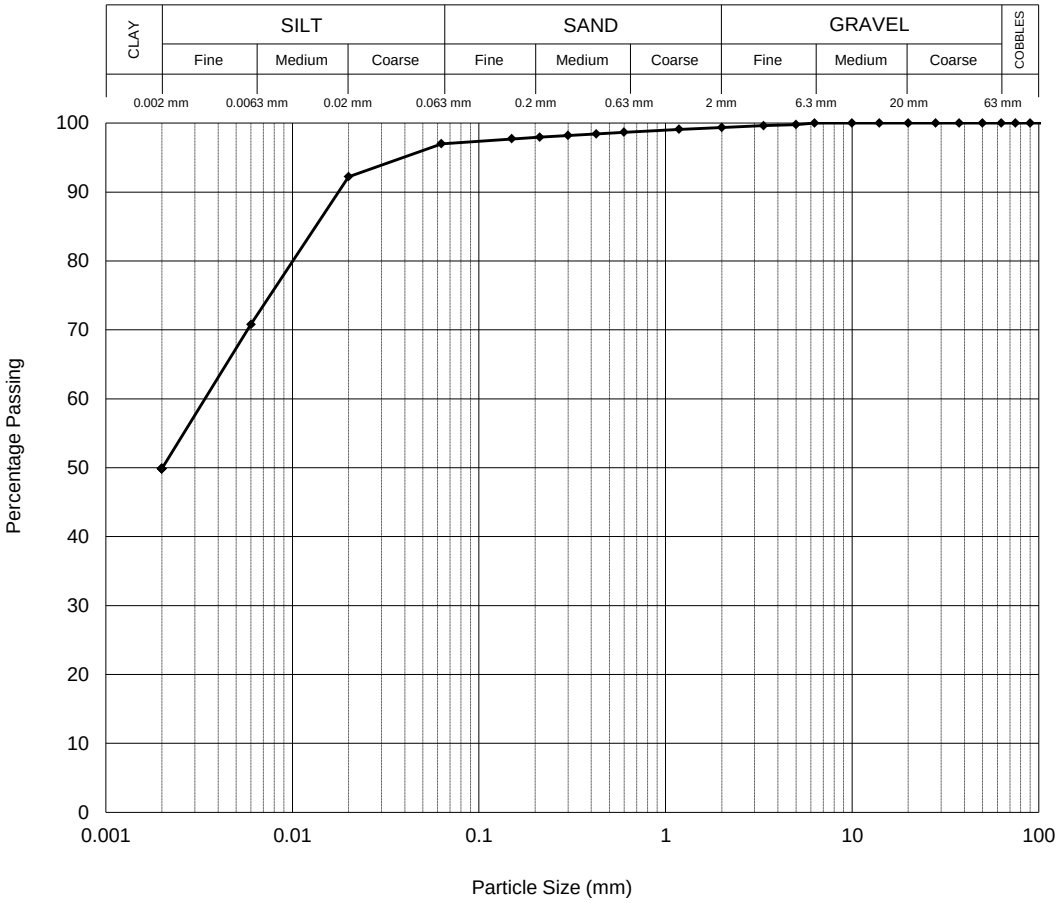
BH / TP No.	RA4
Sample Ref	E5-B3
Sample Type	B

Description

Dark grey SILT and CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	92
6 µm	71
2 µm	50
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	47
Clay	50

Checked and Approved by

S Burke

S Burke - Senior Technician
05/11/2018

Project Number:

GEO / 28211

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
679	C1-L5 02.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
680	C1-L5 02.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
681	C1-L5 02.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
682	B2-L6 02.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	100	
683	B2-L6 02.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
684	B2-L6 02.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
685	C2-L6 02.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	80	
686	C2-L6 02.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
687	C2-L6 02.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
688	D2-L6 02.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	128	
689	D2-L6 02.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
690	D2-L6 02.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	90	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
691	C4-L5 03.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
692	C4-L5 03.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
693	C4-L5 03.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
694	G4-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	128	
695	G4-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
696	G4-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
697	G3-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
698	G3-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
699	G3-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
700	G2-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
701	G2-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
702	G2-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
703	F2-L1 03.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
704	F2-L1 03.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
705	F2-L1 03.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
706	E1-L2 04.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
707	E1-L2 04.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
708	E1-L2 04.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
709	F1-L2 04.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
710	F1-L2 04.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
711	F1-L2 04.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
712	G1-L2 04.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
713	G1-L2 04.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
714	G1-L2 04.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	94	
715	E2-L1 04.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
716	E2-L1 04.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
717	E2-L1 04.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
718	F3-L1 04.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
719	F3-L1 04.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
720	F3-L1 04.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
721	C4-L6 04.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
722	C4-L6 04.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	
723	C4-L6 04.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver



R Anstee, Materials and Field Testing Director

Date 08/07/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
724	G2-L2 05.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
725	G2-L2 05.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
726	G2-L2 05.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
727	G3-L2 05.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
728	G3-L2 05.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	114	
729	G3-L2 05.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
730	F4-L1 05.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
731	F4-L1 05.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
732	F4-L1 05.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
733	G4-L2 05.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
734	G4-L2 05.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
735	G4-L2 05.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
736	C4-L6 05.07.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
737	C4-L6 05.07.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
738	C4-L6 05.07.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130+	Reworked

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
739	E1-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	58	
740	E1-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
741	E1-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	126	
742	F2-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	110	
743	F2-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	128	
744	F2-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	72	
745	F3-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	98	
746	F3-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	105	
747	F3-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
748	F4-L2 06.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
749	F4-L2 06.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
750	F4-L2 06.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
751	C4-L7 06.07.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	105	
752	C4-L7 06.07.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	105	
753	C4-L7 06.07.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	94	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
507	B2-L1 19.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
508	B2-L1 19.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
509	B2-L1 19.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
510	C2-L1 19.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
511	C2-L1 19.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	125	
512	C2-L1 19.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
513	D2-L1 19.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	115	
514	D2-L1 19.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
515	D2-L1 19.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
516	C1-L1 20.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
517	C1-L1 20.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
518	C1-L1 20.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
519	D1-L1 20.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
520	D1-L1 20.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
521	D1-L1 20.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
522	C4-L1 20.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
523	C4-L1 20.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	101	
524	C4-L1 20.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
525	B2-L2 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
526	B2-L2 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
527	B2-L2 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
528	C2-L2 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
529	C2-L2 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
530	C2-L2 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
531	C1-L2A 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
532	C1-L2A 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
533	C1-L2A 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	128	
534	D2-L2 21.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
535	D2-L2 21.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
536	D2-L2 21.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
537	C4-L2 22.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
538	C4-L2 22.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
539	C4-L2 22.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
540	C1-L2 22.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
541	C1-L2 22.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
542	C1-L2 22.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
543	D1-L2 22.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
544	D1-L2 22.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
545	D1-L2 22.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
546	B2-L3 22.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
547	B2-L3 22.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
548	B2-L3 22.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	24/06/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
619	D2-L3 25.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
620	D2-L3 25.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
621	D2-L3 25.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
622	C2-L3 25.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
623	C2-L3 25.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
624	C2-L3 25.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
625	C4-L2 25.06.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
626	C4-L2 25.06.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	100	
627	C4-L2 25.06.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
628	D1-L3 25.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
629	D1-L3 25.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
630	D1-L3 25.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
631	B2-L4 26.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
632	B2-L4 26.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
633	B2-L4 26.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
634	C1-L3 26.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
635	C1-L3 26.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
636	C1-L3 26.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	08/07/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
637	D2-L4 27.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	122	
638	D2-L4 27.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
639	D2-L4 27.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
640	B2-L4 27.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
641	B2-L4 27.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
642	B2-L4 27.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	Reworked
643	C4-L3 27.06.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
644	C4-L3 27.06.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
645	C4-L3 27.06.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
646	C2-L4 27.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
647	C2-L4 27.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
648	C2-L4 27.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	122	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
649	B2-L5 28.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	128	
650	B2-L5 28.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	120	
651	B2-L5 28.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
652	C2-L5 28.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
653	C2-L5 28.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
654	C2-L5 28.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
655	C1-L4 28.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	106	
656	C1-L4 28.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
657	C1-L4 28.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
658	D1-L4 28.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	124	
659	D1-L4 28.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
660	D1-L4 28.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
661	D2-L5 28.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
662	D2-L5 28.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	128	
663	D2-L5 28.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
664	C4-L4 29.06.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	120	
665	C4-L4 29.06.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
666	C4-L4 29.06.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	130+	
667	G1-L1 29.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	128	
668	G1-L1 29.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
669	G1-L1 29.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
670	F1-L1 29.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
671	F1-L1 29.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
672	F1-L1 29.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
673	E1-L1 29.06.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
674	E1-L1 29.06.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
675	E1-L1 29.06.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
676	D1-L5 29.06.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
677	D1-L5 29.06.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	
678	D1-L5 29.06.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
762	E2-L2 09.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
763	E2-L2 09.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
764	E2-L2 09.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
765	G5-L1 09.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	95	
766	G5-L1 09.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
767	G5-L1 09.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
768	F5-L1 09.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
769	F5-L1 09.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
770	F5-L1 09.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
771	C4-L8 09.07.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	105	
772	C4-L8 09.07.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	88	
773	C4-L8 09.07.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	86	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	10/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
776	E3-L1 10.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
777	E3-L1 10.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	68	
778	E3-L1 10.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	100	
779	E4-L1 10.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	104	
780	E4-L1 10.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
781	E4-L1 10.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
782	E5-L1 10.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
783	E5-L1 10.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	108	
784	E5-L1 10.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	130+	
785	D4-L9 10.07.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	94	
786	D4-L9 10.07.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	110	
787	D4-L9 10.07.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	102	
788	F1-L3 10.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
789	F1-L3 10.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	98	
790	F1-L3 10.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	11/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
808	E1-L3 11.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	94	
809	E1-L3 11.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	
810	E1-L3 11.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	112	
811	G2-L3 11.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	105	
812	G2-L3 11.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	125	
813	G2-L3 11.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
814	G3-L3 11.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
815	G3-L3 11.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
816	G3-L3 11.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
817	D4-L-10 11.07.18 HSV1	Layer -10	Grey slightly sandy slightly gravelly CLAY	70	
818	D4-L-10 11.07.18 HSV2	Layer -10	Grey slightly sandy slightly gravelly CLAY	82	
819	D4-L-10 11.07.18 HSV3	Layer -10	Grey slightly sandy slightly gravelly CLAY	110	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	12/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
826	E3-L2 12.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
827	E3-L2 12.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
828	E3-L2 12.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
829	E4-L2 12.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	74	
830	E4-L2 12.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
831	E4-L2 12.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130+	
832	E5-L2 12.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
833	E5-L2 12.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
834	E5-L2 12.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	110	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	13/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
859	D4-L-11 13.07.18 HSV1	Layer -11	Grey slightly sandy slightly gravelly CLAY	120	
860	D4-L-11 13.07.18 HSV2	Layer -11	Grey slightly sandy slightly gravelly CLAY	130+	
861	D4-L-11 13.07.18 HSV3	Layer -11	Grey slightly sandy slightly gravelly CLAY	130+	
862	G5-L2 13.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	80	
863	G5-L2 13.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	72	
864	G5-L2 13.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	90	
865	G4-L3 13.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	85	
866	G4-L3 13.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
867	G4-L3 13.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	80	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	14/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
881	F4-L3 16.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	55	
882	F4-L3 16.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
883	F4-L3 16.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	118	
884	F3-L3 16.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	92	
885	F3-L3 16.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	110	
886	F3-L3 16.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
887	F2-L3 16.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
888	F2-L3 16.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130+	
889	F2-L3 16.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	17/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
893	D4-L1 17.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
894	D4-L1 17.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
895	D4-L1 17.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
896	F5-L2 17.07.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
897	F5-L2 17.07.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
898	F5-L2 17.07.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	18/07/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
901	E2-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	130	
902	E2-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	125	
903	E2-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	112	
904	E3-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
905	E3-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
906	E3-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
907	E4-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	140	
908	E4-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	130	
909	E4-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
910	E5-L3 18.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	98	
911	E5-L3 18.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
912	E5-L3 18.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 19/07/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
917	C5-L1A 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	90	
918	C5-L1A 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	95	
919	C5-L1A 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	84	
920	C5-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
921	C5-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	108	
922	C5-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
923	C4-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	118	
924	C4-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
925	C4-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	115	
926	B4-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	120	
927	B4-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	86	
928	B4-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	118	
929	B3-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	74	
930	B3-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	70	
931	B3-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	108	
932	D4-L1 19.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	135	
933	D4-L1 19.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	95	
934	D4-L1 19.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	20/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
942	C3-L1 20.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
943	C3-L1 20.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
944	C3-L1 20.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	128	
945	D3-L1 20.07.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	58	
946	D3-L1 20.07.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
947	D3-L1 20.07.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	104	
948	C5-L4A 20.07.18 HSV1	Layer 4A	Grey slightly sandy slightly gravelly CLAY	58	
949	C5-L4A 20.07.18 HSV2	Layer 4A	Grey slightly sandy slightly gravelly CLAY	74	
950	C5-L4A 20.07.18 HSV3	Layer 4A	Grey slightly sandy slightly gravelly CLAY	102	
951	G2-L4 20.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
952	G2-L4 20.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
953	G2-L4 20.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
954	G3-L4 20.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
955	G3-L4 20.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	68	
956	G3-L4 20.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
964	G4-L4 23.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
965	G4-L4 23.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
966	G4-L4 23.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
967	G5-L3 23.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
968	G5-L3 23.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	78	
969	G5-L3 23.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
970	F2-L4 23.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	88	
971	F2-L4 23.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	80	
972	F2-L4 23.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
973	F3-L4 23.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
974	F3-L4 23.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	106	
975	F3-L4 23.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	138	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
990	F3-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
991	F3-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	115	
992	F3-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
993	F4-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	128	
994	F4-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	128	
995	F4-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	70	
996	F5-L3 24.07.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
997	F5-L3 24.07.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	142	
998	F5-L3 24.07.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
999	E1-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1000	E1-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
1001	E1-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	98	
1002	E2-L4 24.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	142	
1003	E2-L4 24.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	134	
1004	E2-L4 24.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	141	

cjassociates
King Road Avenue, Bristol, BS11 9HF
Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 25/07/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1031	G2-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	132	
1032	G2-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
1033	G2-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	140	
1034	G3-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	114	
1035	G3-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	115	
1036	G3-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1037	G4-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	120	
1038	G4-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1039	G4-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	98	
1040	G5-L4 26.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	108	
1041	G5-L4 26.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	122	
1042	G5-L4 26.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	98	
1043	F1-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	142	
1044	F1-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1045	F1-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1046	F2-L5 26.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	130	
1047	F2-L5 26.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1048	F2-L5 26.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver

R Anstee, Materials and Field Testing Director

Date 27/07/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1055	F3-L5 27.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1056	F3-L5 27.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1057	F3-L5 27.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
1058	F4-L5 27.07.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	67	
1059	F4-L5 27.07.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	88	
1060	F4-L5 27.07.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	119	
1061	F5-L4 27.07.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1062	F5-L4 27.07.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	112	
1063	F5-L4 27.07.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	65	
1064	B1-L-1 27.07.18 HSV1	Layer -1	Grey slightly sandy slightly gravelly CLAY	104	
1065	B1-L-1 27.07.18 HSV2	Layer -1	Grey slightly sandy slightly gravelly CLAY	150+	
1066	B1-L-1 27.07.18 HSV3	Layer -1	Grey slightly sandy slightly gravelly CLAY	130	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	28/07/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1079	B1-L-5 01.08.18 HSV1	Layer -5	Grey slightly sandy slightly gravelly CLAY	125	
1080	B1-L-5 01.08.18 HSV2	Layer -5	Grey slightly sandy slightly gravelly CLAY	125	
1081	B1-L-5 01.08.18 HSV3	Layer -5	Grey slightly sandy slightly gravelly CLAY	105	
1082	B1-L-2A 01.08.18 HSV1	Layer -2A	Grey slightly sandy slightly gravelly CLAY	115	
1083	B1-L-2A 01.08.18 HSV2	Layer -2A	Grey slightly sandy slightly gravelly CLAY	115	
1084	B1-L-2A 01.08.18 HSV3	Layer -2A	Grey slightly sandy slightly gravelly CLAY	108	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1096	E2-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	88	
1097	E2-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1098	E2-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	130	
1099	E3-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	75	
1100	E3-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	125	
1101	E3-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1102	E4-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
1103	E4-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1104	E4-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	95	
1105	B1-L-6 01.08.18 HSV1	Layer -6	Grey slightly sandy slightly gravelly CLAY	150+	
1106	B1-L-6 01.08.18 HSV2	Layer -6	Grey slightly sandy slightly gravelly CLAY	60	
1107	B1-L-6 01.08.18 HSV3	Layer -6	Grey slightly sandy slightly gravelly CLAY	135	
1108	E5-L5 01.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	135	
1109	E5-L5 01.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	92	
1110	E5-L5 01.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	92	

cjassociates
King Road Avenue, Bristol, BS11 9HF
Tel 0117 9821473

Approver

R Anstee, Materials and Field Testing Director

Date 02/08/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1124	B2-L7 02.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	100	
1125	B2-L7 02.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	110	
1126	B2-L7 02.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	96	
1127	B3-L2 02.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
1128	B3-L2 02.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1129	B3-L2 02.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	105	
1130	B4-L2 02.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	100	
1131	B4-L2 02.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1132	B4-L2 02.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1133	C4-L2 02.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1134	C4-L2 02.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	124	
1135	C4-L2 02.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1136	B1-L-5A 02.08.18 HSV1	Layer -5A	Grey slightly sandy slightly gravelly CLAY	135	
1137	B1-L-5A 02.08.18 HSV2	Layer -5A	Grey slightly sandy slightly gravelly CLAY	120	
1138	B1-L-5A 02.08.18 HSV3	Layer -5A	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	04/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1160	C3-L2 03.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	108	
1161	C3-L2 03.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	120	
1162	C3-L2 03.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	80	
1163	G5-L5 03.08.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1164	G5-L5 03.08.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1165	G5-L5 03.08.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	132	
1166	G4-L6 03.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	102	
1167	G4-L6 03.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	140	
1168	G4-L6 03.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	04/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1178	G3-L6 06.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1179	G3-L6 06.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1180	G3-L6 06.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	125	
1181	G2-L6 06.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1182	G2-L6 06.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1183	G2-L6 06.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	135	
1184	F2-L6 06.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1185	F2-L6 06.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	78	
1186	F2-L6 06.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	118	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	07/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1198	F3-L6 08.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	115	
1199	F3-L6 08.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1200	F3-L6 08.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1201	F4-L6 08.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	130	
1202	F4-L6 08.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	130	
1203	F4-L6 08.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	122	
1204	G4-L7 08.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	90	
1205	G4-L7 08.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1206	G4-L7 08.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1207	E1-L6 08.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	90	
1208	E1-L6 08.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1209	E1-L6 08.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	130	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	09/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1215	E4-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1216	E4-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1217	E4-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1218	E5-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1219	E5-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1220	E5-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1221	E3-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1222	E3-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	135	
1223	E3-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	78	
1224	E2-L6 09.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	
1225	E2-L6 09.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	110	
1226	E2-L6 09.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	150+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 10/08/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1283	B1-L1 14.08.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1284	B1-L1 14.08.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	140	
1285	B1-L1 14.08.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	125	
1286	B1-L2 14.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1287	B1-L2 14.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	108	
1288	B1-L2 14.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	130	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	15/08/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1302	C1-L6 15.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	89	
1303	C1-L6 15.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	108	
1304	C1-L6 15.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	98	
1305	D1-L5A 15.08.18 HSV1	Layer 5A	Grey slightly sandy slightly gravelly CLAY	108	
1306	D1-L5A 15.08.18 HSV2	Layer 5A	Grey slightly sandy slightly gravelly CLAY	112	
1307	D1-L5A 15.08.18 HSV3	Layer 5A	Grey slightly sandy slightly gravelly CLAY	150+	
1308	D1-L6 15.08.18 HSV1	Layer 6	Grey slightly sandy slightly gravelly CLAY	124	
1309	D1-L6 15.08.18 HSV2	Layer 6	Grey slightly sandy slightly gravelly CLAY	120	
1310	D1-L6 15.08.18 HSV3	Layer 6	Grey slightly sandy slightly gravelly CLAY	104	
1311	E1-L7 15.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	132	
1312	E1-L7 15.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1313	E1-L7 15.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver

R. Anstee

Date 17/08/2018

R Anstee, Materials and Field Testing Director

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1333	B1-L2 17.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1334	B1-L2 17.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1335	B1-L2 17.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1336	D1-L7 17.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	130	
1337	D1-L7 17.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1338	D1-L7 17.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	135	
1339	C1-L7 17.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	145	
1340	C1-L7 17.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150	
1341	C1-L7 17.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	125	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	18/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1350	C2-L7 20.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	145	
1351	C2-L7 20.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1352	C2-L7 20.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1353	D2-L7 20.08.18 HSV1	Layer 7	Grey slightly sandy slightly gravelly CLAY	150+	
1354	D2-L7 20.08.18 HSV2	Layer 7	Grey slightly sandy slightly gravelly CLAY	120	
1355	D2-L7 20.08.18 HSV3	Layer 7	Grey slightly sandy slightly gravelly CLAY	140	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	21/08/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1369	C5-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1370	C5-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	110	
1371	C5-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1372	C4-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
1373	C4-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	110	
1374	C4-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	
1375	C3-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1376	C3-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1377	C3-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1378	B4-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	75	
1379	B4-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1380	B4-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	108	
1381	B3-L3 22.08.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	94	
1382	B3-L3 22.08.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1383	B3-L3 22.08.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1390	B2-L8 23.08.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1391	B2-L8 23.08.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	135	
1392	B2-L8 23.08.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	115	
1393	C5-L4 23.08.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	100	
1394	C5-L4 23.08.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1395	C5-L4 23.08.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	24/08/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1397	C4-L4 24.08.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1398	C4-L4 24.08.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1399	C4-L4 24.08.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1400	B2-L9 24.08.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	122	
1401	B2-L9 24.08.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1402	B2-L9 24.08.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	25/08/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1441	D5-L2 29.08.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	142	
1442	D5-L2 29.08.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1443	D5-L2 29.08.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1444	C2-L8 29.08.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	116	
1445	C2-L8 29.08.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1446	C2-L8 29.08.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	30/08/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1468	C3-L4 31.08.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	102	
1469	C3-L4 31.08.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	88	
1470	C3-L4 31.08.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	92	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	02/09/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1485	D3-L2 03.09.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	115	
1486	D3-L2 03.09.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	134	
1487	D3-L2 03.09.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	106	
1488	D4-L2 03.09.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	110	
1489	D4-L2 03.09.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1490	D4-L2 03.09.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	70	

QA Ref.	cjassociates	Approver	Date	Fig.
	King Road Avenue, Bristol, BS11 9HF	R. Anstee	04/09/2018	
Rev 1.0	Tel 0117 9821473	R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1513	B1-L3 05.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	122	
1514	B1-L3 05.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	90	
1515	B1-L3 05.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1516	B2-L10 05.09.18 HSV1	Layer 10	Grey slightly sandy slightly gravelly CLAY	150+	
1517	B2-L10 05.09.18 HSV2	Layer 10	Grey slightly sandy slightly gravelly CLAY	150+	
1518	B2-L10 05.09.18 HSV3	Layer 10	Grey slightly sandy slightly gravelly CLAY	125	
1519	C2-L9 05.09.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1520	C2-L9 05.09.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1521	C2-L9 05.09.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	06/09/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1524	D2-L8 06.09.18 HSV1	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1525	D2-L8 06.09.18 HSV2	Layer 8	Grey slightly sandy slightly gravelly CLAY	150+	
1526	D2-L8 06.09.18 HSV3	Layer 8	Grey slightly sandy slightly gravelly CLAY	78	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	07/09/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1552	D3-L3 07.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1553	D3-L3 07.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	102	
1554	D3-L3 07.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	64	
1555	D4-L3 07.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	120	
1556	D4-L3 07.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	100	
1557	D4-L3 07.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	80	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	08/09/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1581	B3-L4 12.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	95	
1582	B3-L4 12.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	132	
1583	B3-L4 12.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1584	B4-L4 12.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1585	B4-L4 12.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	140	
1586	B4-L4 12.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1587	D2-L9 12.09.18 HSV1	Layer 9	Grey slightly sandy slightly gravelly CLAY	150+	
1588	D2-L9 12.09.18 HSV2	Layer 9	Grey slightly sandy slightly gravelly CLAY	132	
1589	D2-L9 12.09.18 HSV3	Layer 9	Grey slightly sandy slightly gravelly CLAY	121	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 13/09/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1615	C3-L5 14.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1616	C3-L5 14.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
1617	C3-L5 14.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	124	
1618	C4-L5 14.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1619	C4-L5 14.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	128	
1620	C4-L5 14.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1621	C5-L5 14.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1622	C5-L5 14.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	95	
1623	C5-L5 14.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R Anstee, Materials and Field Testing Director	16/09/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1629	D3-L4 17.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1630	D3-L4 17.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1631	D3-L4 17.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1632	D4-L4 17.09.18 HSV1	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1633	D4-L4 17.09.18 HSV2	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1634	D4-L4 17.09.18 HSV3	Layer 4	Grey slightly sandy slightly gravelly CLAY	150+	
1635	D5-L3 17.09.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1636	D5-L3 17.09.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1637	D5-L3 17.09.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

cjassociates

King Road Avenue, Bristol, BS11 9HF

Tel 0117 9821473

Approver

R. Anstee

R Anstee, Materials and Field Testing Director

Date 18/09/2018

Fig.

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1646	D3-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	142	
1647	D3-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	118	
1648	D3-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1649	D4-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	104	
1650	D4-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	108	
1651	D4-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1652	B3-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	122	
1653	B3-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1654	B3-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	105	
1655	B4-L5 19.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1656	B4-L5 19.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1657	B4-L5 19.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1725	D5-L5 27.09.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	80	
1726	D5-L5 27.09.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1727	D5-L5 27.09.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	28/09/2018	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1757	B1-L5 02.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1758	B1-L5 02.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1759	B1-L5 02.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1760	A1-L1 02.10.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1761	A1-L1 02.10.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1762	A1-L1 02.10.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	125	

QA Ref.	cjassociates	Approver	Date	Fig.
	King Road Avenue, Bristol, BS11 9HF	R. Anstee	03/10/2018	
Rev 1.0	Tel 0117 9821473	R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1791	B3-B1 05.10.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1792	B3-B1 05.10.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1793	B3-B1 05.10.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1794	G5-B1 05.10.18 HSV1	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1795	G5-B1 05.10.18 HSV2	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1796	G5-B1 05.10.18 HSV3	Layer 1	Grey slightly sandy slightly gravelly CLAY	150+	
1797	E5-B2 05.10.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1798	E5-B2 05.10.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1799	E5-B2 05.10.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1800	C5-B2 05.10.18 HSV1	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1801	C5-B2 05.10.18 HSV2	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	
1802	C5-B2 05.10.18 HSV3	Layer 2	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.		Approver	Date	Fig.
Rev 1.0	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	07/10/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1834	B3-B3 10.10.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1835	B3-B3 10.10.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1836	B3-B3 10.10.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1837	E3-B3 10.10.18 HSV1	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1838	E3-B3 10.10.18 HSV2	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	
1839	E3-B3 10.10.18 HSV3	Layer 3	Grey slightly sandy slightly gravelly CLAY	150+	

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1887	B2-B5 19.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1888	B2-B5 22.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1889	B2-B5 10.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1890	B4-B5 10.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	115	
1891	B4-B5 10.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1892	B4-B5 10.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	

QA Ref.	cjassociates	Approver	Date	Fig.
Rev 1.0	King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	R. Anstee	22/10/2018	
		R Anstee, Materials and Field Testing Director		

TEST REPORT
HAND SHEAR VANE

Project No.: AG0390

Project Name: Docksway Cell 4

Client: Jim Davies Civil Engineering Limited

Address: Ty Gwyn Banalog Terrace
Hollybush
Blackwood
NP12 0SG

Sample No	Sample ID	Depth (m)	Description	KPA Reading	Remarks
1902	B2-B5 23.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	110	
1903	B2-B5 23.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1904	B2-B5 23.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	120	
1905	B4-B5 23.10.18 HSV1	Layer 5	Grey slightly sandy slightly gravelly CLAY	150+	
1906	B4-B5 23.10.18 HSV2	Layer 5	Grey slightly sandy slightly gravelly CLAY	130	
1907	B4-B5 23.10.18 HSV3	Layer 5	Grey slightly sandy slightly gravelly CLAY	105	

QA Ref.	cjassociates King Road Avenue, Bristol, BS11 9HF Tel 0117 9821473	Approver	Date	Fig.
Rev 1.0		R Anstee, Materials and Field Testing Director	24/10/2018	

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**492 - 494**		

Site Reference:	**GT1 - GT3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-L1-C1	Core 2 C2-L1-C1	Core 3 D2-L1-C1		
Bulk Density	2.08	2.06	2.08		
Moisture Content	22	21	22		
Dry Density	1.71	1.70	1.71		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	0.5	2.4	0.5		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 20/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**495**		

Site Reference:	**GT4 - GT6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 4 B2-L1-C2	Core 5 C2-L1-C2	Core 6 D2-L1-C2		
Bulk Density	2.09	2.07	2.07		
Moisture Content	21	21	22		
Dry Density	1.73	1.71	1.70		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.1	1.6	1.2		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**496**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L1-C1	Core 2 C1-L1-C2	Core 3 D1-L1-C1	Core 4 D1-L1-C2	
Bulk Density	2.10	2.07	2.07	2.09	
Moisture Content	20	21	23	20	
Dry Density	1.75	1.71	1.69	1.74	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.1	1.1	0.2	1.8	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**497**		

Site Reference:	**Core 5 - Core 6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 5 C4-L1-C1	Core 6 C4-L1-C2			
Bulk Density	2.08	2.13			
Moisture Content	21	20			
Dry Density	1.72	1.78			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	1.6	0.2			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**498**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**21/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-L2-C1	Core 2 C2-L2-C1	Core 3 C1-L2A-C1	Core 4 D2-L2-C1	
Bulk Density	2.07	2.06	2.07	2.10	
Moisture Content	19	20	22	21	
Dry Density	1.73	1.72	1.70	1.74	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	3.1	3.6	0.9	0.0	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee, Materials and Field Testing Director	Date 22/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**505**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L2-C1	Core 2 D1-L2-C1	Core 3 C1-L2-C1	Core 4 B2-L3-C1	
Bulk Density	2.00	2.04	2.08	2.05	
Moisture Content	19	20	20	21	
Dry Density	1.68	1.70	1.74	1.70	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	7.0	4.2	2.6	2.8	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 23/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**506**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L2-C2				
Bulk Density	2.05				
Moisture Content	19				
Dry Density	1.73				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	4.6				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 24/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**561**		

Site Reference:	**Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**26/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 2 B2-L4-C2				
Bulk Density	2.04				
Moisture Content	22				
Dry Density	1.68				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	2.1				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 28/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**573**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**27/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L3-C1	Core 2 C2-L4-C1	Core 3 D2-L4-C1	Core 4 B2-L4-C1	
Bulk Density	2.12	2.08	2.03	2.04	
Moisture Content	19	21	22	21	
Dry Density	1.78	1.71	1.66	1.69	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.4	0.8	2.3	3.5	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 28/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**574**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**28/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L4-C1	Core 2 D1-L4-C1	Core 3 B2-L5-C1	Core 4 C2-L5-C1	Core 5 D2-L5-C1
Bulk Density	2.03	2.12	2.06	2.07	2.08
Moisture Content	22	20	20	21	21
Dry Density	1.66	1.77	1.71	1.71	1.72

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.3	0.5	3.1	1.6	1.1

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 29/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**586**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**29/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L4-C1	Core 2 E1-L1-C1	Core 3 F1-L1-C1	Core 4 C1-L1-C1	Core 5 D1-L5-C1
Bulk Density	2.08	2.09	2.06	2.06	2.09
Moisture Content	20	19	22	22	21
Dry Density	1.73	1.75	1.68	1.69	1.73

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.7	2.3	0.8	1.0	1.0

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee, Materials and Field Testing Director	Date 30/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**505**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L2-C1	Core 2 D1-L2-C1	Core 3 C1-L2-C1	Core 4 B2-L3-C1	
Bulk Density	2.00	2.04	2.08	2.05	
Moisture Content	19	20	20	21	
Dry Density	1.68	1.70	1.74	1.70	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	7.0	4.2	2.6	2.8	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 23/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**506**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L2-C2				
Bulk Density	2.05				
Moisture Content	19				
Dry Density	1.73				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	4.6				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 24/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**559**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**25/06/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C2-L3-C1	Core 2 D2-L3-C1	Core 3 C4-L2-C1	Core 4 D1-L3-C1	
Bulk Density	2.06	2.11	2.03	2.06	
Moisture Content	21	19	22	20	
Dry Density	1.71	1.77	1.66	1.71	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.7	1.4	2.5	2.7	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 26/06/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**596**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**02/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L5-C1	Core 2 B2-L6-C1	Core 3 C2-L6-C1	Core 4 D2-L6-C1	
Bulk Density	2.09	2.03	2.06	2.06	
Moisture Content	19	23	21	23	
Dry Density	1.76	1.65	1.71	1.68	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	3.0	2.0	2.3	0.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 03/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**604**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**03/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L5-C1	Core 2 G2-L1-C1	Core 3 G3-L1-C1	Core 4 G4-L1-C1	Core 5 F2-L1-C1
Bulk Density	2.06	2.07	2.06	2.07	2.06
Moisture Content	22	21	22	22	21
Dry Density	1.68	1.72	1.69	1.70	1.70

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	0.8	1.8	1.8	0.4	2.7

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 04/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**607**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**04/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L1-C1	Core 2 E2-L1-C1	Core 3 E1-L2-C1	Core 4 F1-L2-C1	Core 5 G1-L2-C1
Bulk Density	2.08	2.09	2.11	2.01	2.08
Moisture Content	20	20	18	23	20
Dry Density	1.74	1.74	1.78	1.63	1.73

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.1	1.3	2.5	2.3	2.1

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 05/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**608**		

Site Reference:	**Core 6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**04/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 6 C4-L6-C1				
Bulk Density	2.06				
Moisture Content	18				
Dry Density	1.75				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	4.5				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 05/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**617**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**05/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 G2-L2-C1	Core 2 G3-L2-C1	Core 3 F4-L1-C1	Core 4 G4-L2-C1	Core 5 C4-L6-C1
Bulk Density	2.03	2.04	2.03	2.01	2.04
Moisture Content	23	22	20	23	21
Dry Density	1.66	1.67	1.69	1.63	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.0	1.8	4.3	2.5	2.9

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 06/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**618**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**06/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F2-L2-C1	Core 2 F3-L2-C1	Core 3 F4-L2-C1	Core 4 E1-L2-C1	Core 5 C4-L7-C1
Bulk Density	2.03	2.03	2.05	2.00	2.06
Moisture Content	25	24	22	23	23
Dry Density	1.63	1.63	1.68	1.62	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	0.2	0.6	2.2	2.8	0.6

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 07/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**761**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**09/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E2-L2-C1	Core 2 G5-L1-C1	Core 3 F5-L1-C1	Core 4 C4-L8-C1	
Bulk Density	2.06	2.02	2.03	2.03	
Moisture Content	21	24	24	23	
Dry Density	1.71	1.63	1.64	1.66	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.3	1.6	1.2	1.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 10/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**775**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**10/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Bright and sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E3-L1-C1	Core 2 E4-L1-C1	Core 3 E5-L1-C1	Core 4 D4-L9-C1	Core 5 F1-L3-C1
Bulk Density	2.04	2.07	2.07	2.06	2.05
Moisture Content	24	22	21	23	22
Dry Density	1.64	1.70	1.71	1.68	1.69

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	0.6	1.3	1.4	0.6	1.8

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 11/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**880**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**16/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F4-L3-C1	Core 2 F3-L3-C1	Core 3 F2-L3-C1		
Bulk Density	2.06	2.06	2.06		
Moisture Content	21	23	20		
Dry Density	1.70	1.68	1.71		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.8	0.6	2.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 17/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**892**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D4-L1-C1	Core 2 F5-L2-C1			
Bulk Density	2.05	2.07			
Moisture Content	17	20			
Dry Density	1.75	1.72			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	5.8	2.4			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 18/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**899**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D4-L1-C2				
Bulk Density	2.07				
Moisture Content	19				
Dry Density	1.73				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	3.1				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 19/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**900**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**18/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E2-L3-C1	Core 2 E3-L3-C1	Core 3 E4-L3-C1	Core 4 E5-L3-C1	
Bulk Density	2.04	2.02	2.06	2.05	
Moisture Content	22	22	22	21	
Dry Density	1.68	1.66	1.69	1.69	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.9	3.0	1.5	2.1	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 19/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**915**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C5-L1A-C1	Core 2 C5-L1-C1	Core 3 C4-L1-C1	Core 4 B4-L1-C1	Core 5 B3-L1-C1
Bulk Density	2.04	2.05	2.06	2.02	2.04
Moisture Content	22	23	23	25	24
Dry Density	1.68	1.67	1.67	1.62	1.65

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.1	1.3	0.7	0.7	0.3

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee — R Anstee, Materials and Field Testing Director	Date 20/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**941**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L1-C1	Core 2 D3-L1-C1	Core 3 C5-L4A-C1	Core 4 G2-L4-C1	Core 5 G3-L4-C1
Bulk Density	2.06	2.05	1.99	2.05	2.01
Moisture Content	21	22	26	23	23
Dry Density	1.70	1.69	1.58	1.67	1.63

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.6	1.7	1.5	1.2	2.9

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**963**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**23/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 G4-L4-C1	Core 2 G5-L3-C1	Core 3 F2-L4-C1	Core 4 F3-L4-C1	
Bulk Density	2.08	2.08	1.99	1.97	
Moisture Content	20	21	25	27	
Dry Density	1.73	1.72	1.59	1.56	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.5	1.1	2.3	1.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 24/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**989**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**24/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L4-C1	Core 2 F4-L4-C1	Core 3 F5-L3-C1	Core 4 E1-L4-C1	Core 5 E2-L4-C1
Bulk Density	2.06	2.04	2.07	2.02	2.03
Moisture Content	22	24	22	23	21
Dry Density	1.68	1.65	1.70	1.65	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.1	0.6	1.1	2.4	3.5

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 25/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1009**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**25/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Sunny**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E3-L4-C1	Core 2 E4-L4-C1	Core 3 E5-L4-C1		
Bulk Density	2.05	2.09	2.04		
Moisture Content	21	22	23		
Dry Density	1.69	1.71	1.66		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	2.3	0.2	1.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee, Materials and Field Testing Director	Date 26/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1029**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**26/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 G2-L5-C1	Core 2 G3-L5-C1	Core 3 G4-L5-C1	Core 4 G5-L4-C1	Core 5 F1-L5-C1
Bulk Density	2.08	2.05	2.02	2.05	2.05
Moisture Content	21	22	23	22	22
Dry Density	1.73	1.67	1.65	1.69	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.4	1.5	2.3	1.6	1.6

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 27/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1030**		

Site Reference:	**Core 6**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**26/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 6 F2-L5-C1				
Bulk Density	2.08				
Moisture Content	22				
Dry Density	1.71				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	0.5				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 27/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1054**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**27/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L5-C1	Core 2 F4-L5-C1	Core 3 F5-L4-C1	Core 4 B1-L-1-C1	
Bulk Density	2.06	2.06	2.03	2.05	
Moisture Content	21	21	21	23	
Dry Density	1.70	1.71	1.67	1.67	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	1.9	1.9	3.1	1.2	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 28/07/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1078**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**31/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L-5-C1	Core 2 B1-L-2A-C1			
Bulk Density	2.03	2.02			
Moisture Content	22	24			
Dry Density	1.66	1.63			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.3	2.1			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 01/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1078**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**31/07/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L-5-C1	Core 2 B1-L-2A-C1			
Bulk Density	2.03	2.02			
Moisture Content	22	24			
Dry Density	1.66	1.63			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.3	2.1			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 01/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1095**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**01/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E2-L5-C1	Core 2 E3-L5-C1	Core 3 E4-L5-C1	Core 4 B1-L-6-C1	Core 5 E5-L5-C1
Bulk Density	2.04	2.02	2.07	2.03	2.05
Moisture Content	22	23	22	24	22
Dry Density	1.67	1.64	1.70	1.63	1.68

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.7	2.7	0.9	0.9	1.6

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 02/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1123**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**02/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B4-L2-C1	Core 2 B3-L2-C1	Core 3 B2-L7-C1	Core 4 C4-L2-C1	Core 5 B1-L-5A-C1
Bulk Density	2.03	2.08	2.01	2.07	2.06
Moisture Content	22	21	22	21	22
Dry Density	1.67	1.72	1.65	1.71	1.69

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	2.6	1.1	3.6	1.2	0.9

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 03/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1159**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**03/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L2-C1	Core 2 G5-L5-C1	Core 3 G4-L6-C1		
Bulk Density	2.02	2.03	2.05		
Moisture Content	23	23	23		
Dry Density	1.65	1.65	1.67		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	2.5	2.1	0.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee — R Anstee, Materials and Field Testing Director	Date 04/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1214**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**09/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 E4-L6-C1	Core 2 E5-L6-C1	Core 3 E3-L6-C1	Core 4 E2-L6-C1	
Bulk Density	2.07	2.08	2.05	2.07	
Moisture Content	23	21	21	21	
Dry Density	1.69	1.71	1.69	1.71	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	0.1	1.0	2.2	1.6	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 10/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1197**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**08/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 F3-L6-C1	Core 2 F4-L6-C1	Core 3 G4-L7-C1	Core 4 E1-L6-C1	
Bulk Density	2.02	2.04	2.01	2.03	
Moisture Content	23	23	26	25	
Dry Density	1.64	1.66	1.60	1.63	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.1	1.3	0.4	0.5	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 09/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1177**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**06/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 G3-L6-C1	Core 2 G2-L6-C1	Core 3 F2-L6-C1		
Bulk Density	2.01	2.07	2.04		
Moisture Content	22	22	23		
Dry Density	1.65	1.69	1.66		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	3.3	0.2	1.2		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 07/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1282**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**14/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L1-C1	Core 2 B1-L2-C1			
Bulk Density	2.08	2.02			
Moisture Content	19	22			
Dry Density	1.75	1.66			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	3.3	2.8			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 15/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1301**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**15/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C1-L6-C1	Core 2 D1-L5A-C1	Core 3 D1-L6-C1	Core 4 E1-L7-C1	
Bulk Density	2.03	2.05	2.05	2.06	
Moisture Content	24	23	23	21	
Dry Density	1.63	1.67	1.67	1.70	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	0.9	1.2	0.9	2.4	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 16/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1332**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L2-C1	Core 2 D1-L7-C1	Core 3 C1-L7-C1		
Bulk Density	2.07	2.07	2.04		
Moisture Content	21	21	22		
Dry Density	1.72	1.71	1.68		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	2.0	1.9	2.1		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 18/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1349**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**20/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C2-L7-C1	Core 2 D2-L7-C1			
Bulk Density	2.06	2.08			
Moisture Content	21	21			
Dry Density	1.70	1.72			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	1.9	1.7			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 21/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1368**		

Site Reference:	**Core 1 - Core 5**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**22/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C5-L3-C1	Core 2 C4-L3-C1	Core 3 C3-L3-C1	Core 4 B4-L3-C1	Core 5 B3-L3-C1
Bulk Density	2.05	1.96	2.07	2.03	2.02
Moisture Content	22	25	21	21	21
Dry Density	1.69	1.57	1.72	1.67	1.67

Relative Compaction	N/A	N/A	N/A	N/A	N/A
Air Voids % Using PD 2.74Mg/m³	1.9	3.9	1.8	3.2	4.4

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 23/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1389**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**23/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-L8-C1	Core 2 C5-L4-C1			
Bulk Density	2.06	2.06			
Moisture Content	21	21			
Dry Density	1.70	1.71			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.2	2.2			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 24/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1396**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**24/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C4-L4-C1	Core 2 B2-L9-C1			
Bulk Density	2.05	2.02			
Moisture Content	20	21			
Dry Density	1.71	1.67			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	3.0	3.6			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 25/08/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1440**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**29/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D5-L2-C1	Core 2 C2-L8-C1			
Bulk Density	2.09	2.04			
Moisture Content	19	21			
Dry Density	1.76	1.69			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.1	3.1			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 30/08/2018	Fig
			R Anstee, Materials and Field Testing Director		

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1467**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**31/08/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L4-C1				
Bulk Density	2.06				
Moisture Content	20				
Dry Density	1.72				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	3.1				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 02/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1484**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**03/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D3-L2-C1	Core 2 D4-L2-C1			
Bulk Density	2.08	2.04			
Moisture Content	21	21			
Dry Density	1.72	1.68			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	1.2	3.2			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 04/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1512**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**05/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L3-C1	Core 2 B2-L10-C1	Core 3 C2-L9-C1		
Bulk Density	2.09	2.07	2.04		
Moisture Content	21	22	21		
Dry Density	1.73	1.70	1.69		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	0.6	1.0	2.8		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 06/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1523**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**06/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D2-L8-C1				
Bulk Density	2.04				
Moisture Content	22				
Dry Density	1.67				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	2.4				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee	Date 07/09/2018
			R Anstee, Materials and Field Testing Director	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1551**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**07/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D3-L3-C1	Core 2 D4-L3-C1			
Bulk Density	2.05	1.98			
Moisture Content	21	23			
Dry Density	1.69	1.60			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	2.6	3.9			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 08/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1580**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**12/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B3-L4-C1	Core 2 B4-L4-C1	Core 3 D2-L9-C1		
Bulk Density	2.03	2.05	2.07		
Moisture Content	23	22	22		
Dry Density	1.65	1.69	1.70		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.4	2.1	1.2		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 13/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1614**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**14/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 C3-L5-C1	Core 2 C4-L5-C1	Core 3 C5-L5-C1		
Bulk Density	2.00	2.05	2.04		
Moisture Content	25	22	23		
Dry Density	1.60	1.67	1.67		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.8	1.3	1.6		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 16/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1628**		

Site Reference:	**Core 1 - Core 3**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**17/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D3-L4-C1	Core 2 D4-L4-C1	Core 3 D5-L3-C1		
Bulk Density	2.05	2.05	2.06		
Moisture Content	22	21	21		
Dry Density	1.68	1.69	1.70		

Relative Compaction	N/A	N/A	N/A		
Air Voids % Using PD 2.74Mg/m³	1.3	2.4	1.7		

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 18/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1724**		

Site Reference:	**Core 1**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**27/09/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 D5-L5-C1				
Bulk Density	2.07				
Moisture Content	22				
Dry Density	1.70				

Relative Compaction	N/A				
Air Voids % Using PD 2.74Mg/m³	1.0				

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 28/09/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1756**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**02/10/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B1-L5-C1	Core 2 A1-L1-C1			
Bulk Density	1.99	2.06			
Moisture Content	22	21			
Dry Density	1.64	1.71			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	4.8	2.3			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R Anstee, Materials and Field Testing Director	Date 03/10/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1790**		

Site Reference:	**Core 1 - Core 4**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**52/10/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B3-B1-C1	Core 2 G5-B1-C1	Core 3 E5-B2-C1	Core 4 C5-B2-C1	
Bulk Density	2.09	2.08	2.08	2.09	
Moisture Content	19	19	19	21	
Dry Density	1.76	1.75	1.76	1.73	

Relative Compaction	N/A	N/A	N/A	N/A	
Air Voids % Using PD 2.74Mg/m³	2.6	2.9	3.2	1.2	

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 07/10/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1833**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**10/10/2018**	Material Source:	**Unknown**
Tested By:	**R Anstee**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B3-B3-C1	Core 2 E3-B3-C1			
Bulk Density	2.04	2.09			
Moisture Content	21	19			
Dry Density	1.69	1.76			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	3.6	2.0			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 11/10/2018	Fig

TEST REPORT

Insitu Density Test (Core Cutter)

BS 1377 Part 9

Project No.:	**AG0390**	Client:	**Jim Davies Civil Engineering Limited**
Project Name:	**Docksway Cell 4**	Address:	**Ty Gwyn Banalog Terrace Hollybush Blackwood NP12 0SG**
Sample No.:	**1886**		

Site Reference:	**Core 1 - Core 2**	Sample Type:	**Insitu**
Location in works:	**Please see Location Reference**	Material Description:	**Grey slightly sandy slightly gravelly CLAY**
Date Tested:	**19/10/2018**	Material Source:	**Unknown**
Tested By:	**G Tucker**	Material Supplier:	**Unknown**
Environmental Conditions:	**Overcast**	Specification:	**BS1377: Part 9**

Test Results

Location Reference	Core 1 B2-B5-C1	Core 2 B4-B5-C1			
Bulk Density	2.08	2.14			
Moisture Content	18	18			
Dry Density	1.77	1.81			

Relative Compaction	N/A	N/A			
Air Voids % Using PD 2.74Mg/m³	4.0	1.1			

Relative compaction based on:-	Maximum Dry Density	N/A	Mg/m^3
	Optimum Moisture Content	N/A	%
OMC/MDD relates to sample:-			

QA Ref. BS 1377 Part 9 CC Rev. 1.0	cjassociates King Road Avenue, Avonmouth, Bristol, BS11 9HF Tel: 0117 9821473	UKAS TESTING 1429	Approver R. Anstee R Anstee, Materials and Field Testing Director	Date 22/10/2018	Fig

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
B2 L1	GT1	0.00		B	Dark grey slightly sandy silty CLAY			19.3	100	48	21	27		
C2 L1	GT3	0.00		B	Dark grey slightly sandy silty CLAY			23.1	100	50	23	27		
D1 L1	GT6	0.00		B	Dark grey slightly sandy silty CLAY			25.5	100	44	23	21		
D2 L1	GT4	0.00		B	Dark grey slightly sandy silty CLAY			20.9	100	51	22	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
C2L1		GT2			B	Dark grey silty CLAY	2.72	2
D2L1		GT5			B	Dark grey silty CLAY	2.67	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
19/07/2018

Project Number: **GEO / 27648**

Project Name: **DOCKSWAY CELL 4**
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

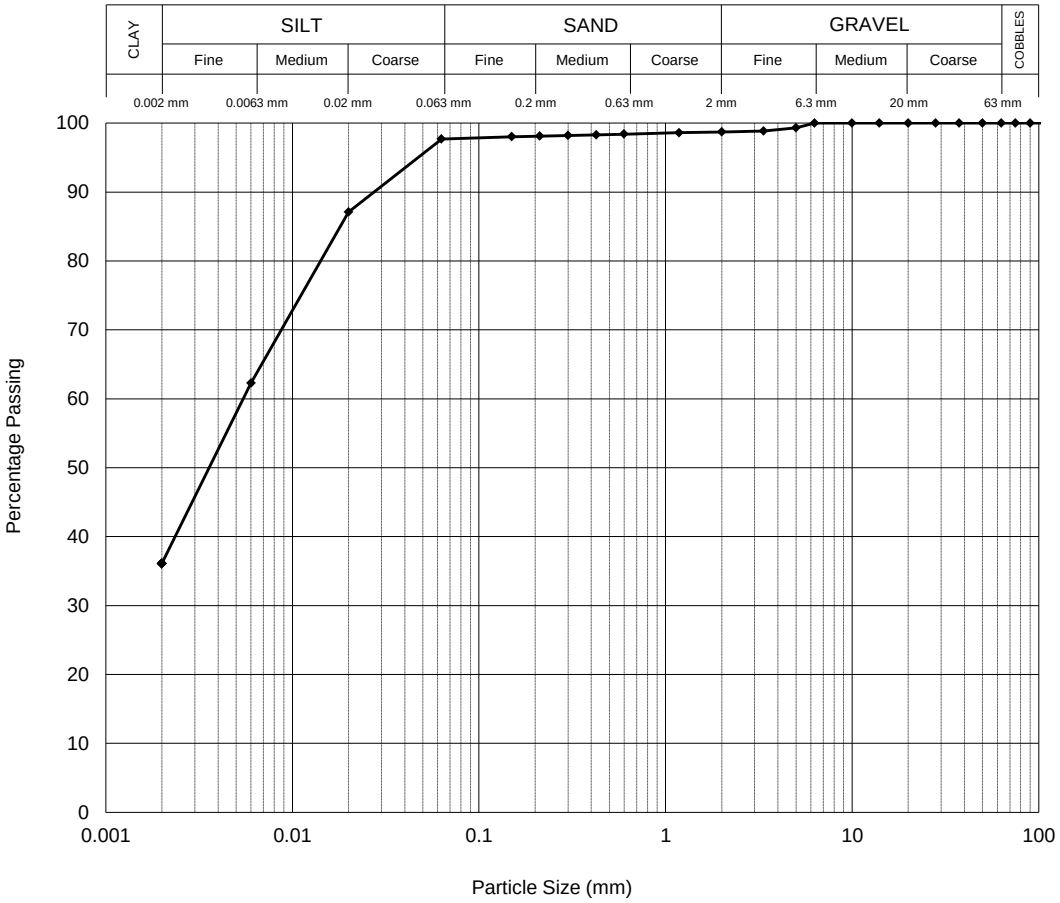
BH / TP No.	C2L1
Sample Ref	GT2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	62
2 µm	36

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	62
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27648

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

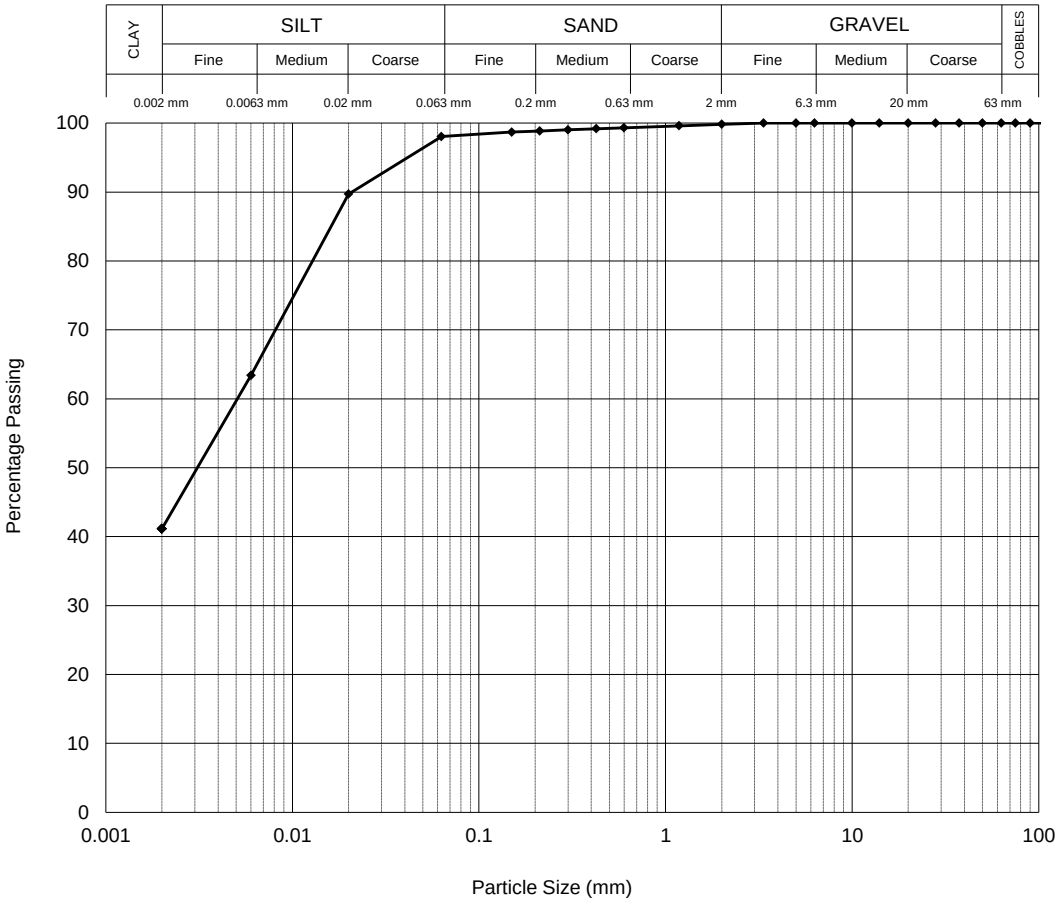
BH / TP No.	D2L1
Sample Ref	GT5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	90
6 µm	63
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	57
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27648

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	B2L1
Sample Ref.:	GT13
Sample Type:	U

Description:
Very stiff dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	30 mm from top
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.80	101.64
Height	*mm*	100.62	100.46
Moisture Content	*%*	20	23
Bulk Density	*Mg/m³*	2.03	2.09
Dry Density	*Mg/m³*	1.69	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.16	1.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	3.8

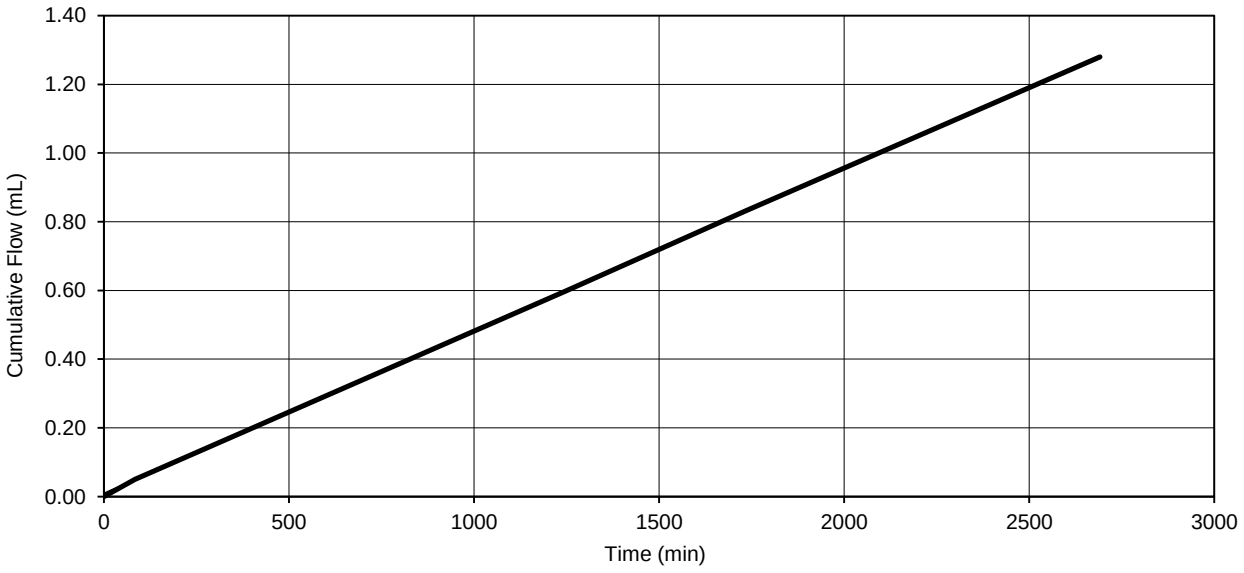
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 9.6×10^{-11} m/s



Checked and Approved by

C F Wallace - Technical Manager
20/07/2018

Project Number:

GEO / 27648

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m^3		%	%	%	%	%	Mg/m^3	
B2 L2	1	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	49	22	27		
C1 L1	2	0.00		B	Dark grey slightly sandy silty CLAY			22.0	100	48	22	26		
C4 L-1	1	0.00		B	Dark grey slightly sandy silty CLAY			20.3	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
C1L1-B1-GT5		GT5			B	Dark grey silty CLAY	2.72	2
C4I-1-B2-GT14		GT14			B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

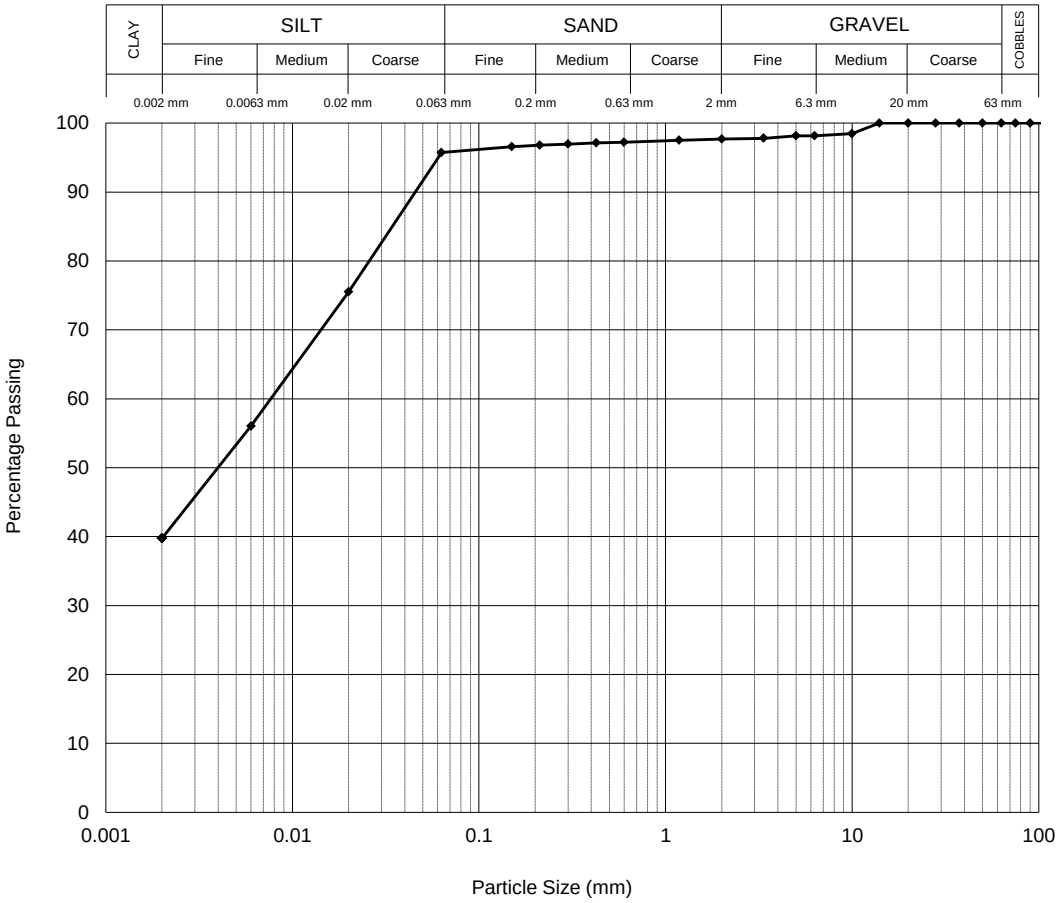
BH / TP No.	C1L1-B1-GT5
Sample Ref	GT5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	98
1.18 mm	98
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	56
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	2
Sand	2
Silt	56
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

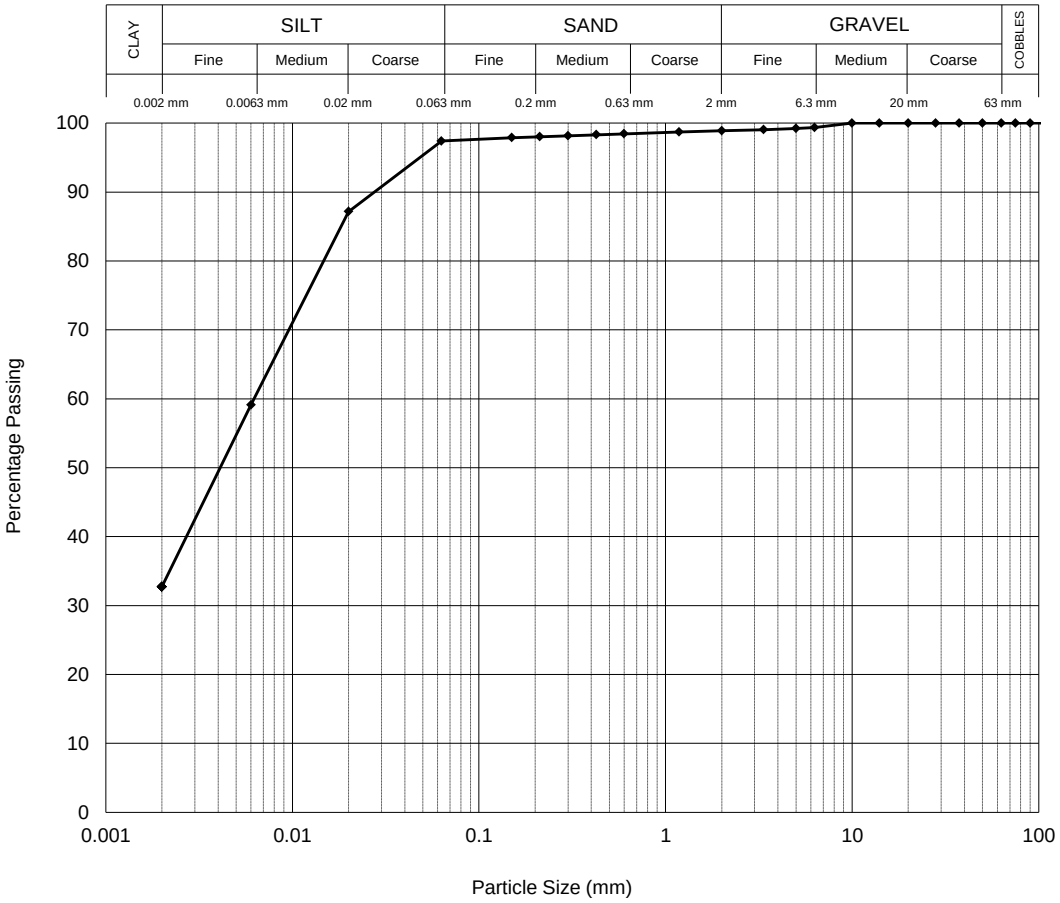
BH / TP No.	C4I-1-B2-GT14
Sample Ref	GT14
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	59
2 µm	33

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	65
Clay	33

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF

(Ref 1530879043)

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	C1L1 (core cutter) GT11
Sample Ref.:	GT11
Sample Type:	U

Description:
Stiff dark grey CLAY with rare fine to medium gravel.

SPECIMEN DETAILS

Depth within original sample	20 mm from top
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.44	101.23
Height	*mm*	100.09	99.87
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.01	2.07
Dry Density	*Mg/m³*	1.64	1.65

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.00	1.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	5.2

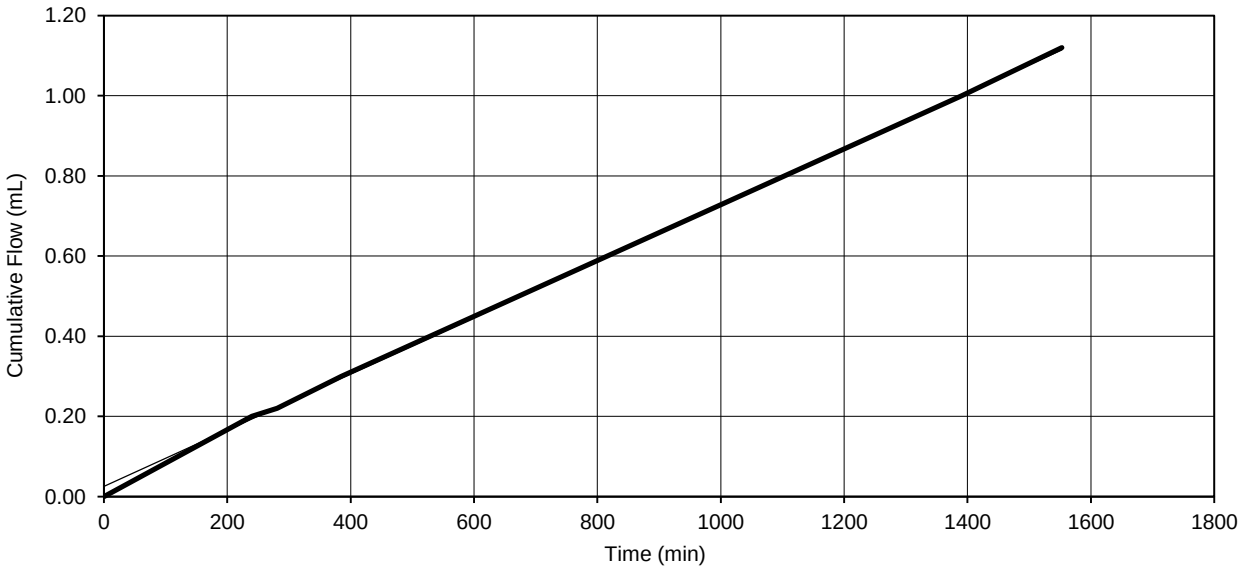
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.4×10^{-10} m/s



Checked and Approved by

C F Wallace - Technical Manager
20/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
B2 L3	4	0.00		B	Dark grey slightly sandy silty CLAY			20.0	100	47	21	26		
C1 L2	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	22	25		
C4 L-2	1	0.00		B	Dark grey slightly sandy silty CLAY			19.2	100	47	21	26		
D1 L2	2	0.00		B	Dark grey slightly sandy silty CLAY			23.2	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		C1-L2			B	Dark grey silty CLAY	2.73	2
GT5		B2-L3			B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

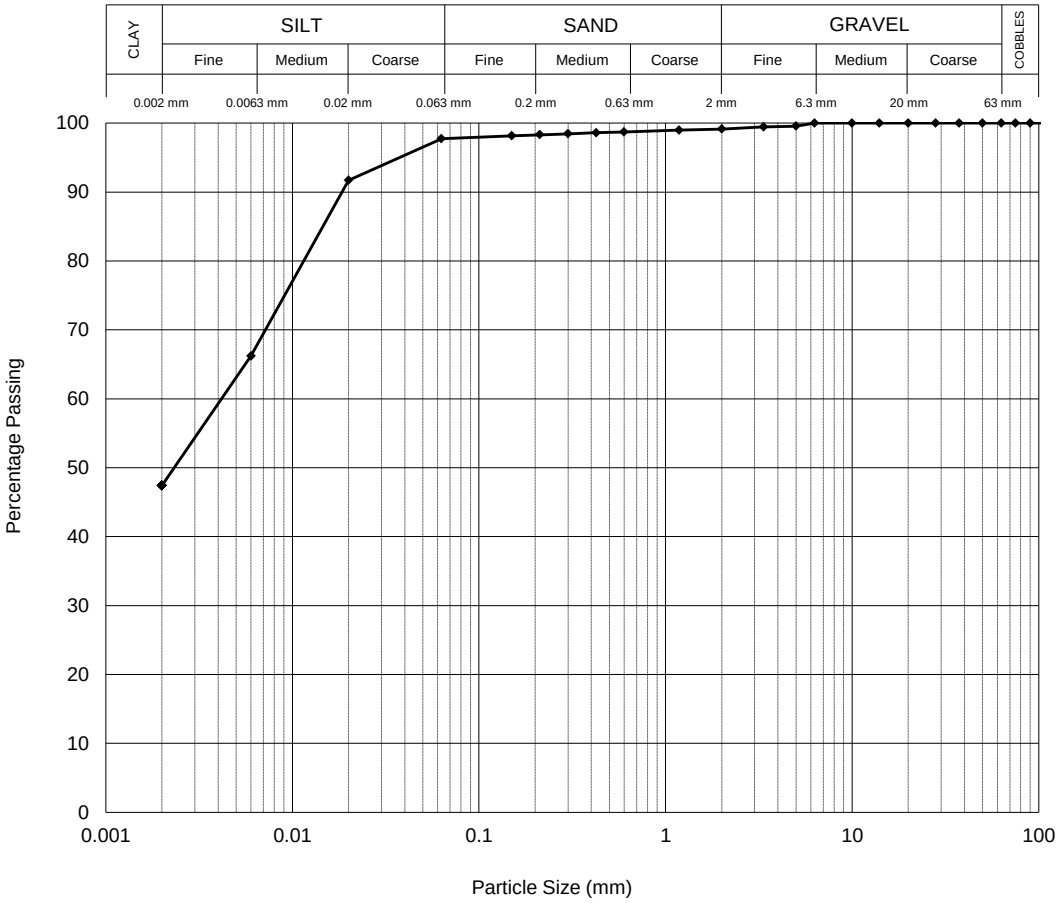
BH / TP No.	GT3
Sample Ref	C1-L2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	92
6 µm	66
2 µm	47
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	50
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

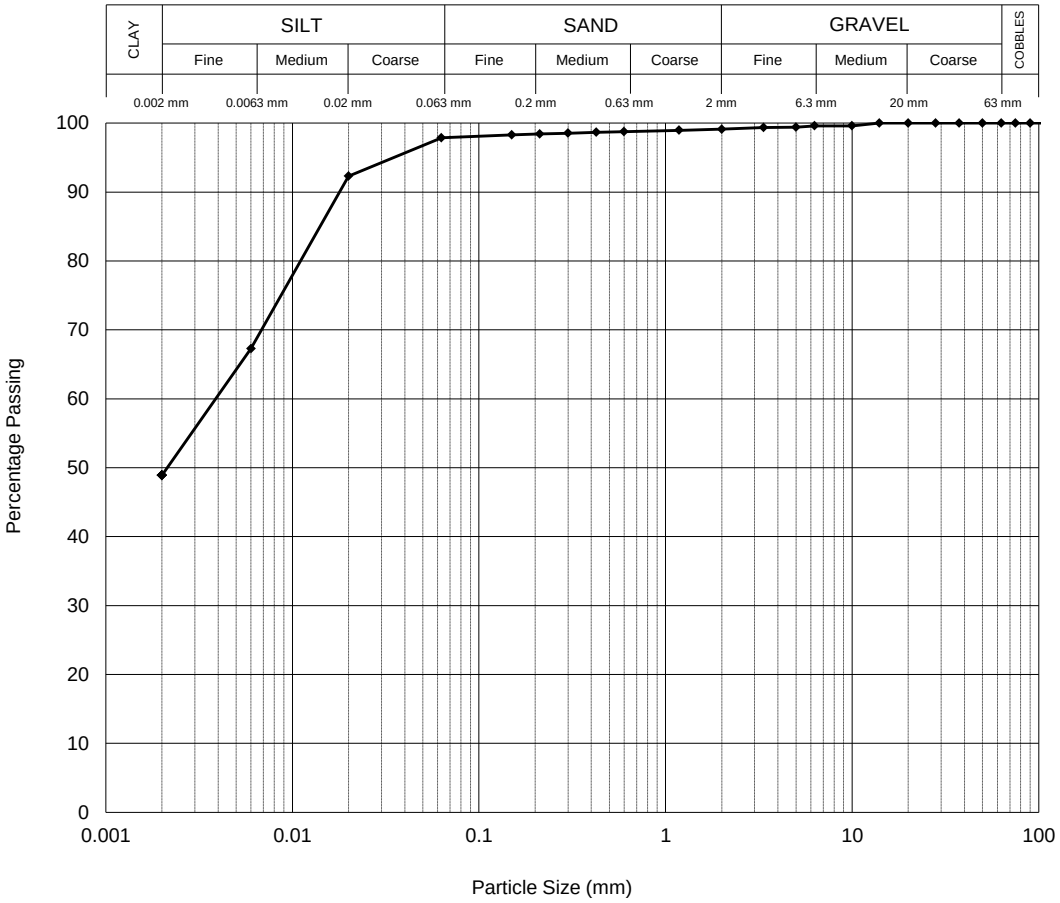
BH / TP No.	GT5
Sample Ref	B2-L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	92
6 µm	67
2 µm	49
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	49
Clay	49

Checked and Approved by

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	B2-L3
Sample Type:	C

Description:
Stiff fissured dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.68	99.41
Height	*mm*	100.86	100.59
Moisture Content	*%*	20	24
Bulk Density	*Mg/m³*	2.06	2.13
Dry Density	*Mg/m³*	1.71	1.72

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.26	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	6.3

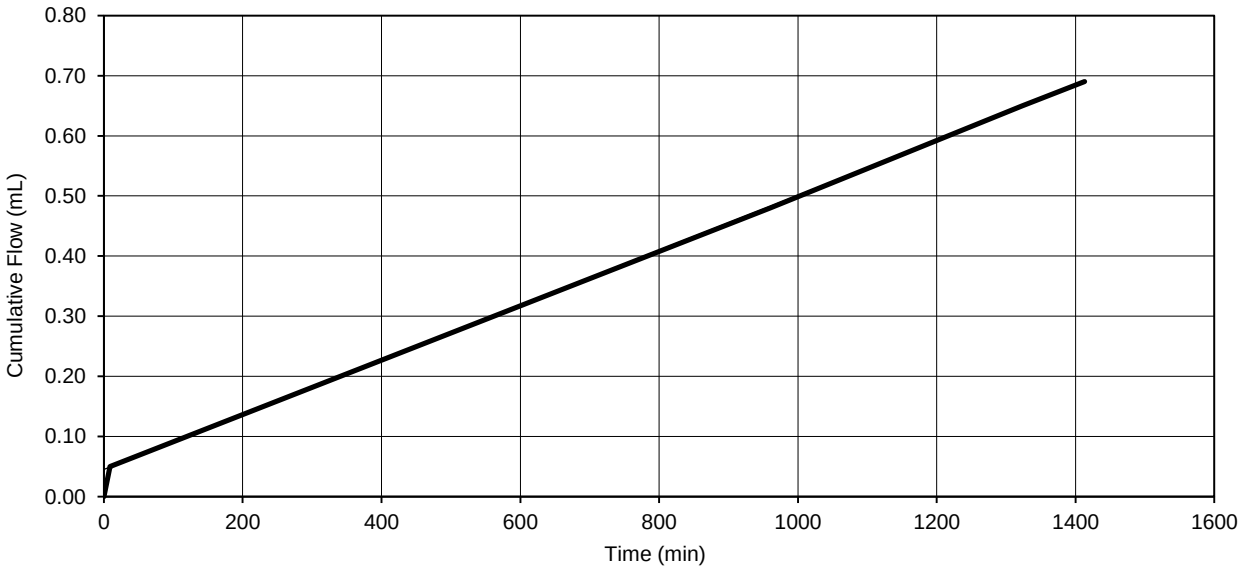
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	5
Consolidation	*days*	3
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 9.7×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:
GEO / 27698

Project Name:
DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
C2 L4	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	20	27		
D1 L4	4	0.00		B	Dark grey slightly sandy silty CLAY			20.6	100	48	20	28		
D2 L4	1	0.00		B	Dark grey slightly sandy silty CLAY			20.5	100	48	20	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D2-L4			B	Dark grey silty CLAY	2.69	2
GT5		D1-L4			B	Dark grey silty CLAY.	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

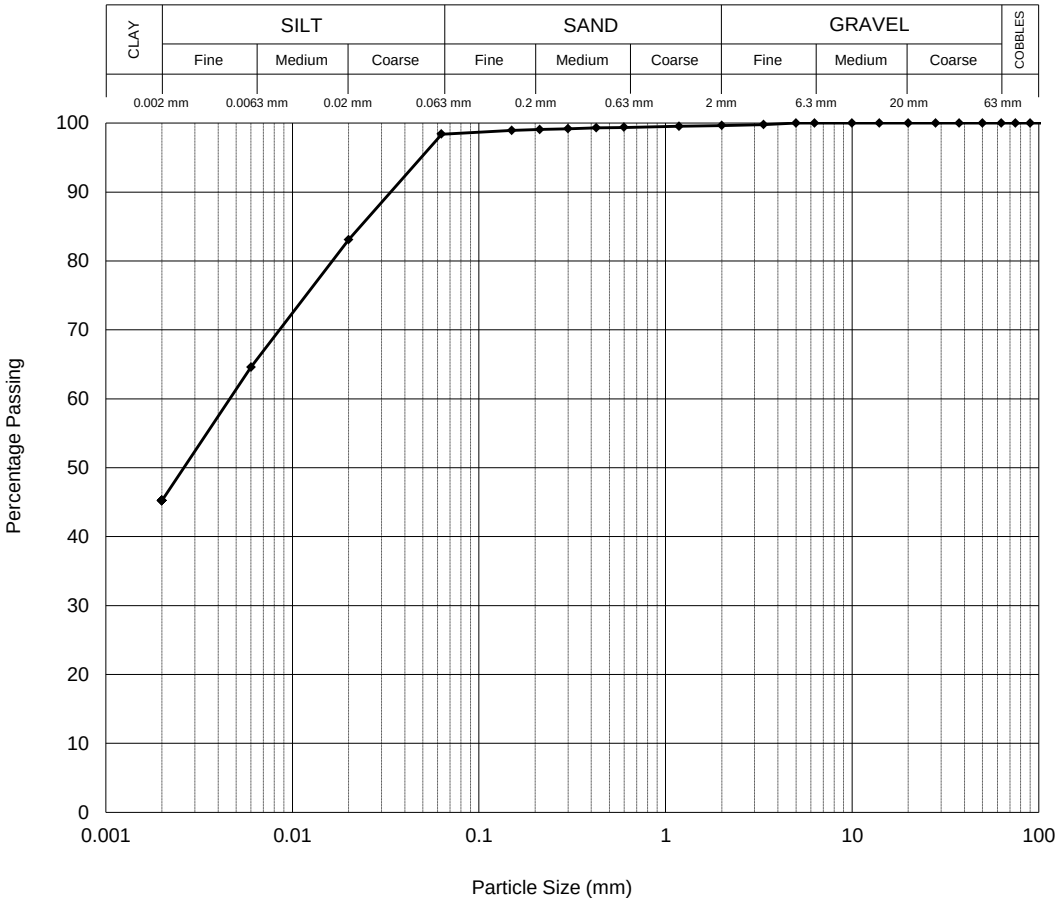
BH / TP No.	GT2
Sample Ref	D2-L4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	65
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	53
Clay	46

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

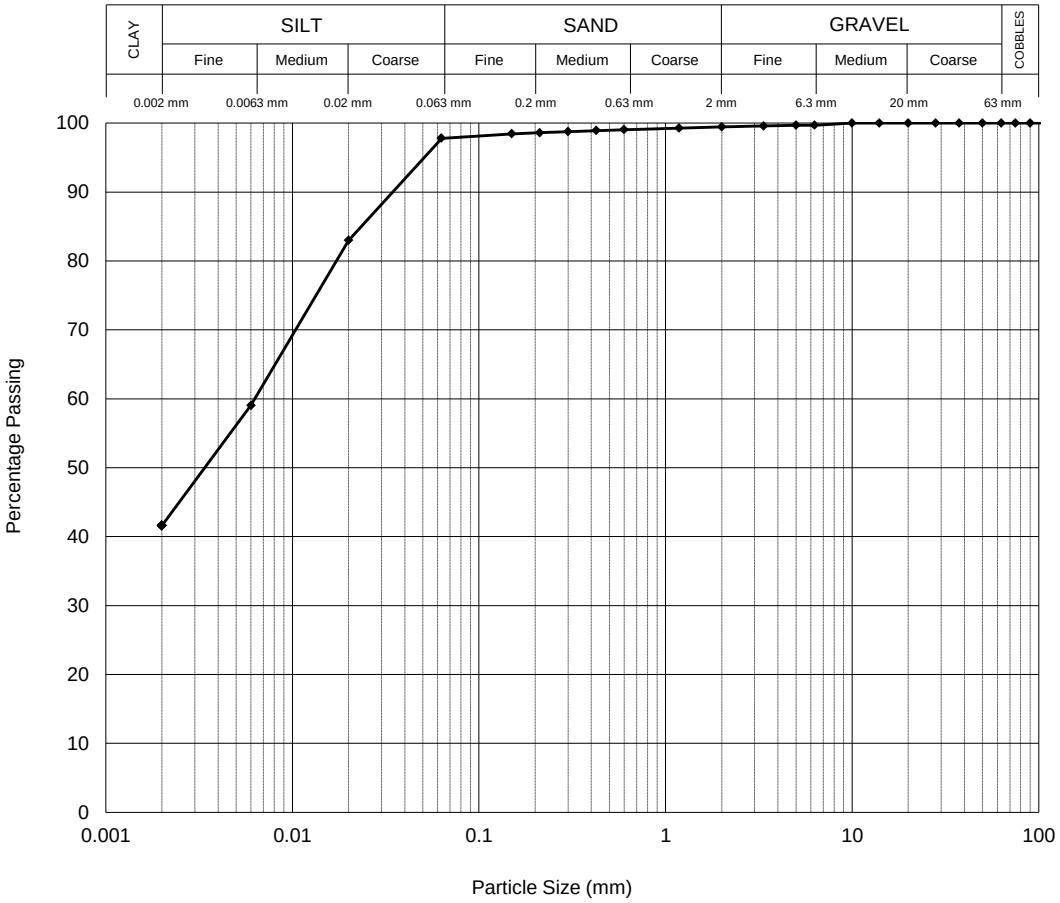
BH / TP No.	GT5
Sample Ref	D1-L4
Sample Type	B

Description

Dark grey silty CLAY.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	59
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	D2-L4
Sample Type:	C

Description:
Firm dark grey CLAY with rare fine to medium gravel. Gravel is weakly cemented mudstone.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.21	100.67
Height	*mm*	130.42	129.73
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.03	2.10
Dry Density	*Mg/m³*	1.66	1.68

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.22	0.99

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	16.8

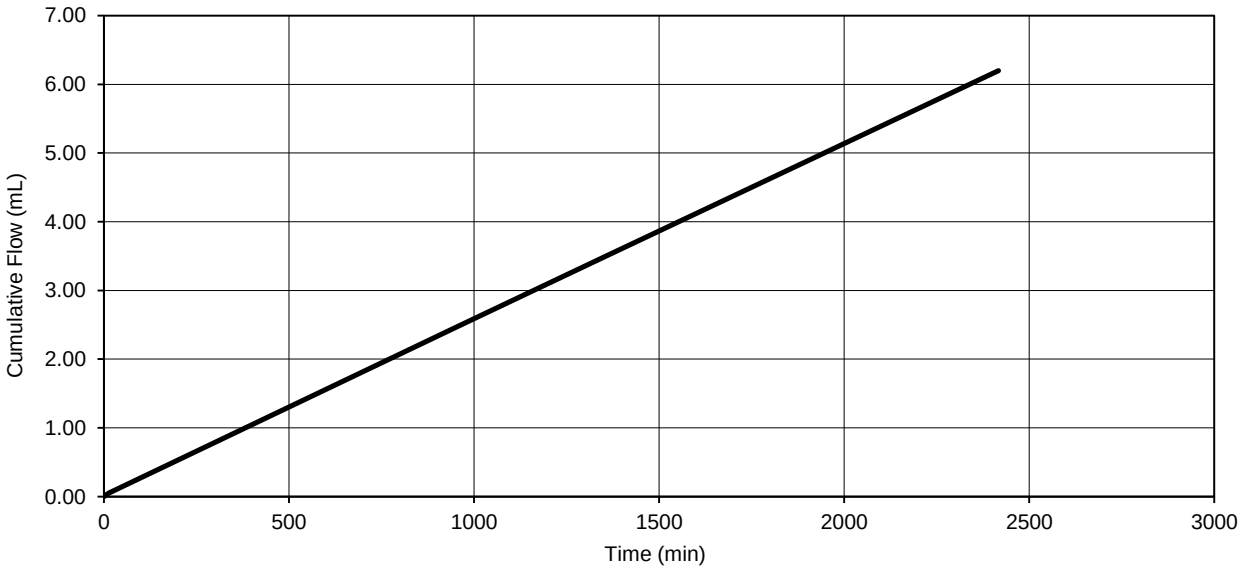
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		7.9
Mean effective stress	*kPa*	50

TEST DURATIONS

Saturation	*days*	6
Consolidation	*days*	4
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 6.8×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27701

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-6	GT9	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.2	100	53	21	32		
E1 L2	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			18.9	100	48	20	28		
E2 L1	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.3	100	47	20	27		
F1 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.0	100	47	20	27		
F3 L1	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.5	100	47	21	26		
F4 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			17.8	100	49	21	28		
G1 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT5		F1L2	B	Dark grey very clayey SILT with rare fossil fragments.	2.70	2
GT8		F3L1	B	Dark grey very clayey SILT with rare fossil fragments.	2.71	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

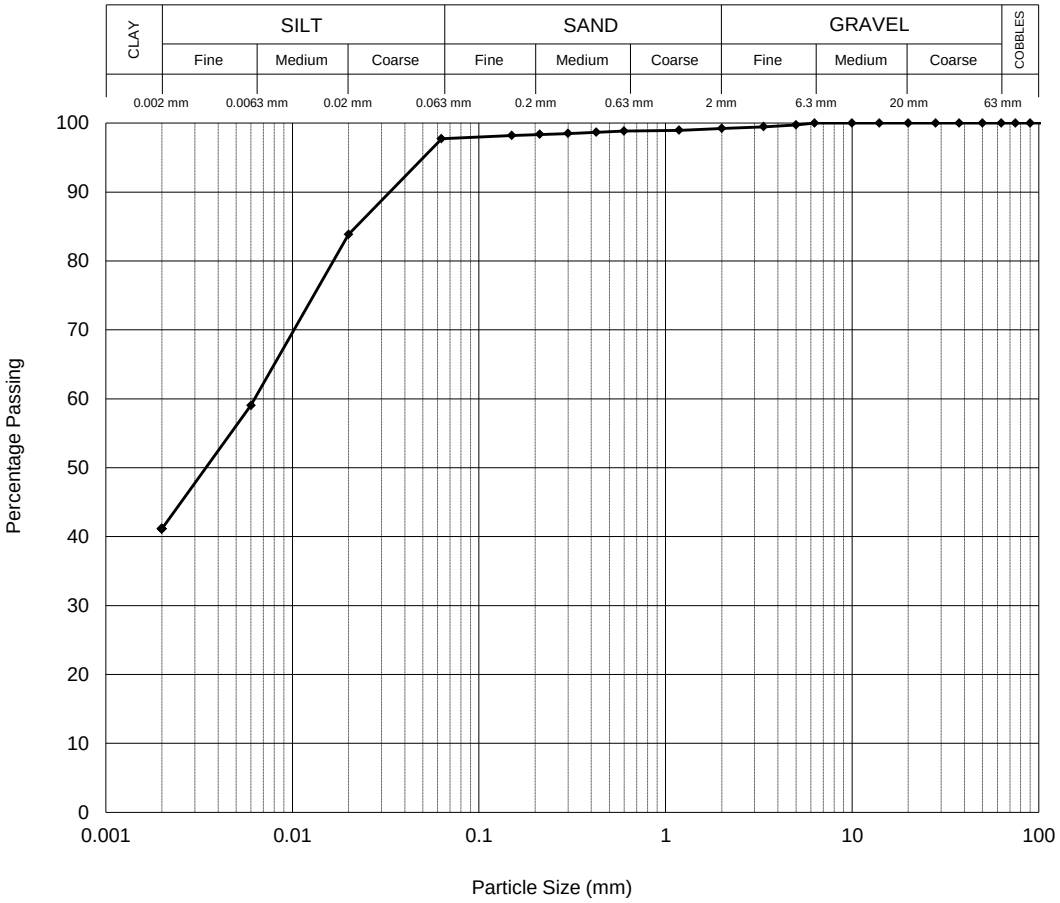
BH / TP No.	GT5
Sample Ref	F1L2
Sample Type	B

Description

Dark grey very clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	59
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	57
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

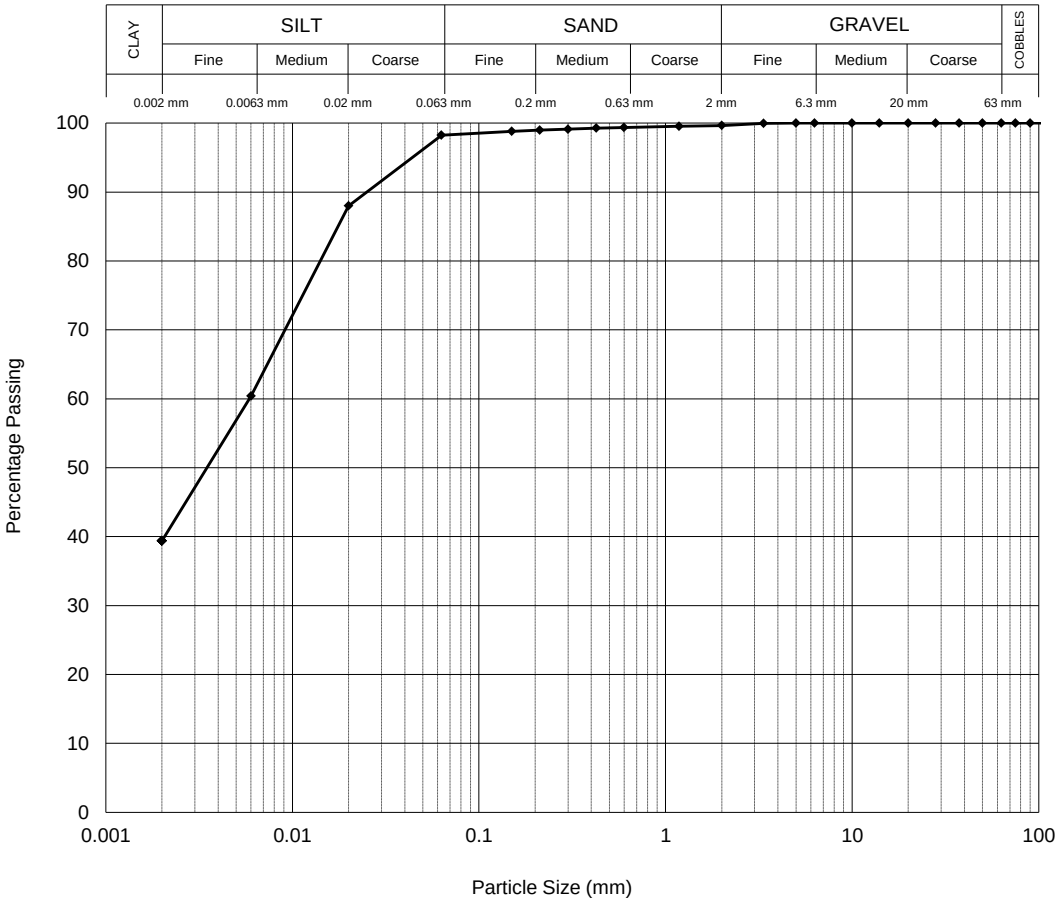
BH / TP No.	GT8
Sample Ref	F3L1
Sample Type	B

Description

Dark grey very clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	60
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	59
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	F3L1
Sample Type:	C

Description:
Stiff dark grey slightly gravelly CLAY. Gravel is fine to medium weakly cemented mudstone.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	101.12	100.57
Height	*mm*	100.11	99.56
Moisture Content	*%*	21	25
Bulk Density	*Mg/m³*	2.02	2.13
Dry Density	*Mg/m³*	1.67	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.43	0.96

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	13.3

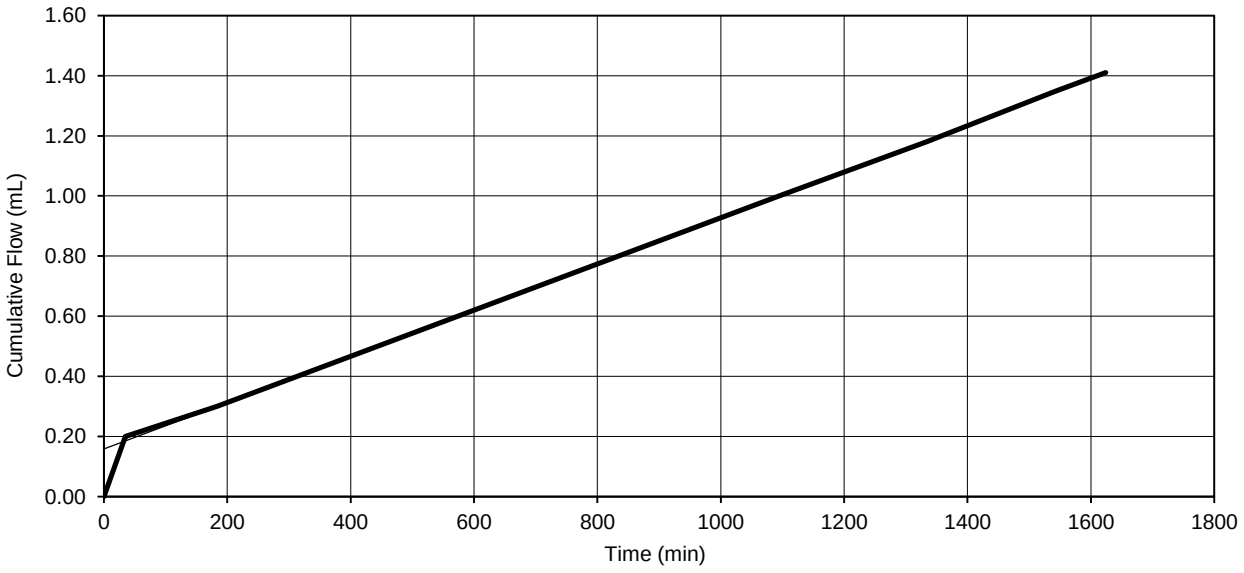
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	6
Consolidation	*days*	3
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 1.6×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27740

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
C4 L-7	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			25.8	100	50	21	29		
F2 L2	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.2	100	50	21	29		
F3 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	49	21	28		
F4 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	50	21	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F3L2		Dark grey clayey SILT with rare fossil fragments.	2.70	2
GT4		F4L2		Dark grey CLAY and SILT with rare fossil fragments.	2.67	2
GT7		C4L7		Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

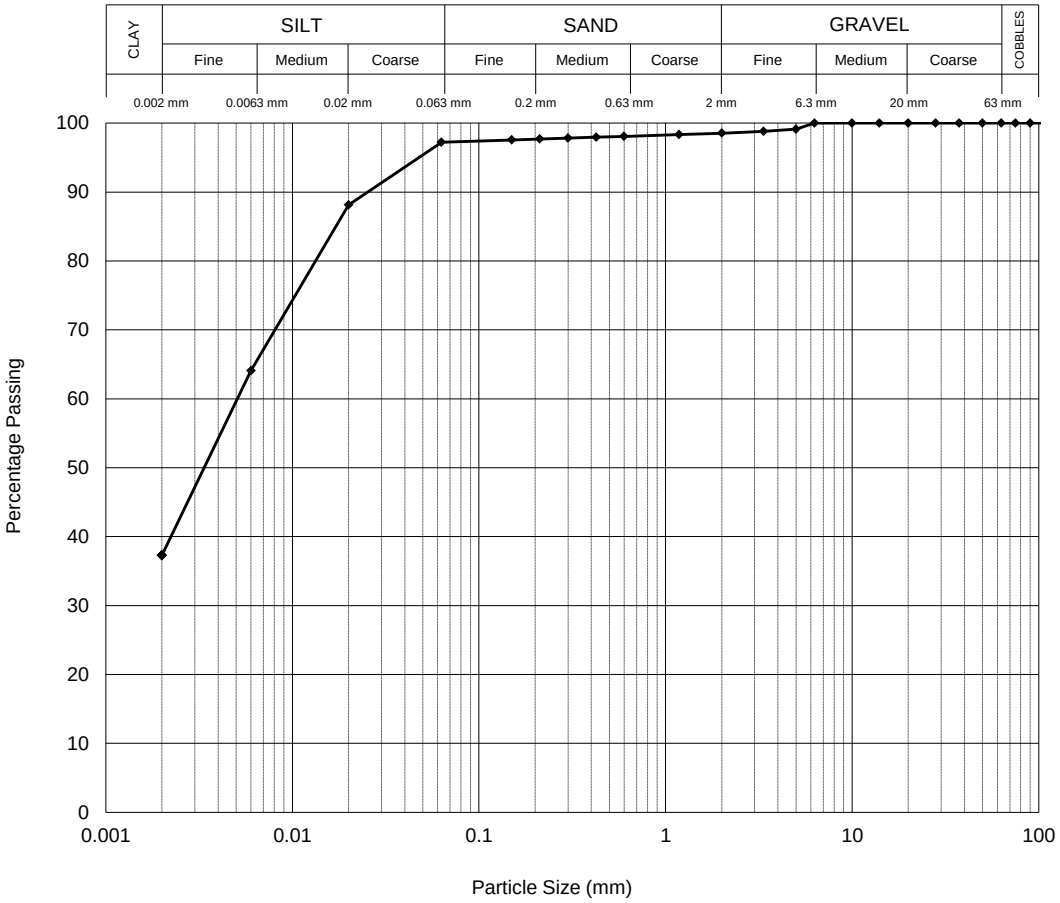
BH / TP No.	GT3
Sample Ref	F3L2

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	64
2 µm	37

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	60
Clay	38

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

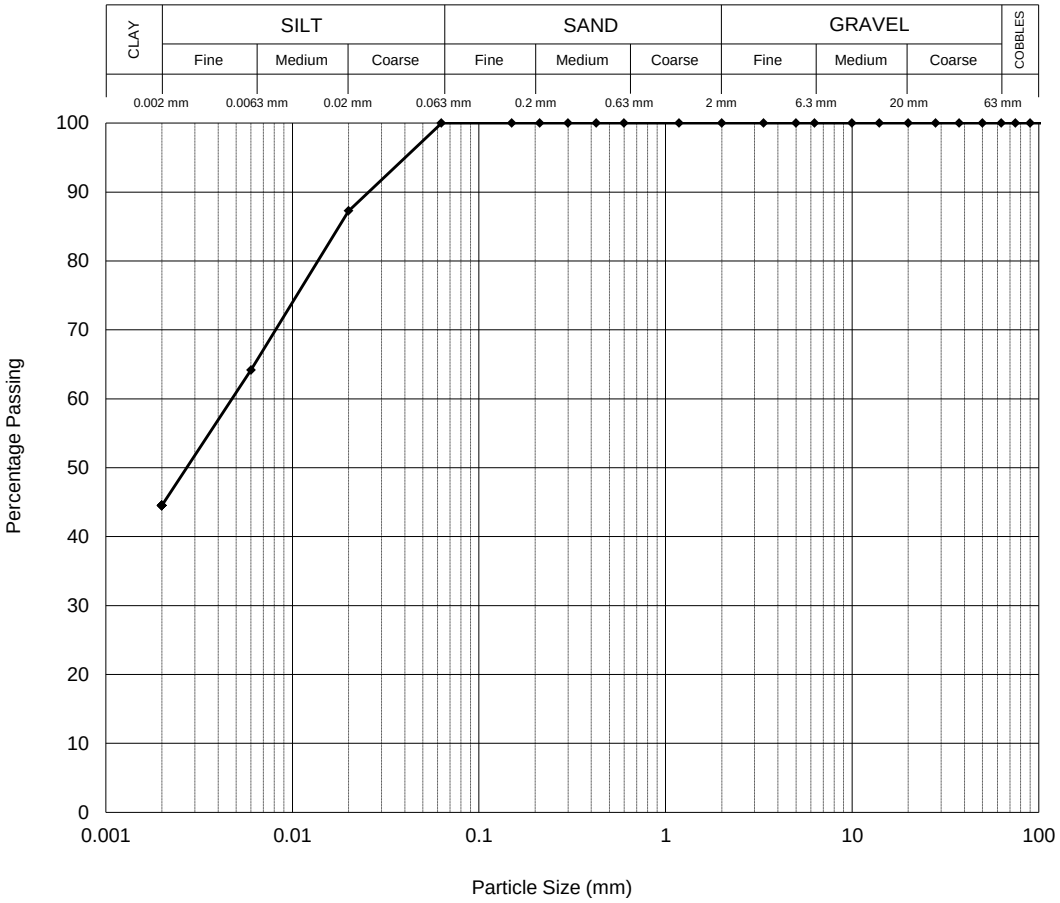
BH / TP No.	GT4
Sample Ref	F4L2

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	100
212 µm	100
150 µm	100
63 µm	100



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	64
2 µm	45

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	0
Silt	55
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

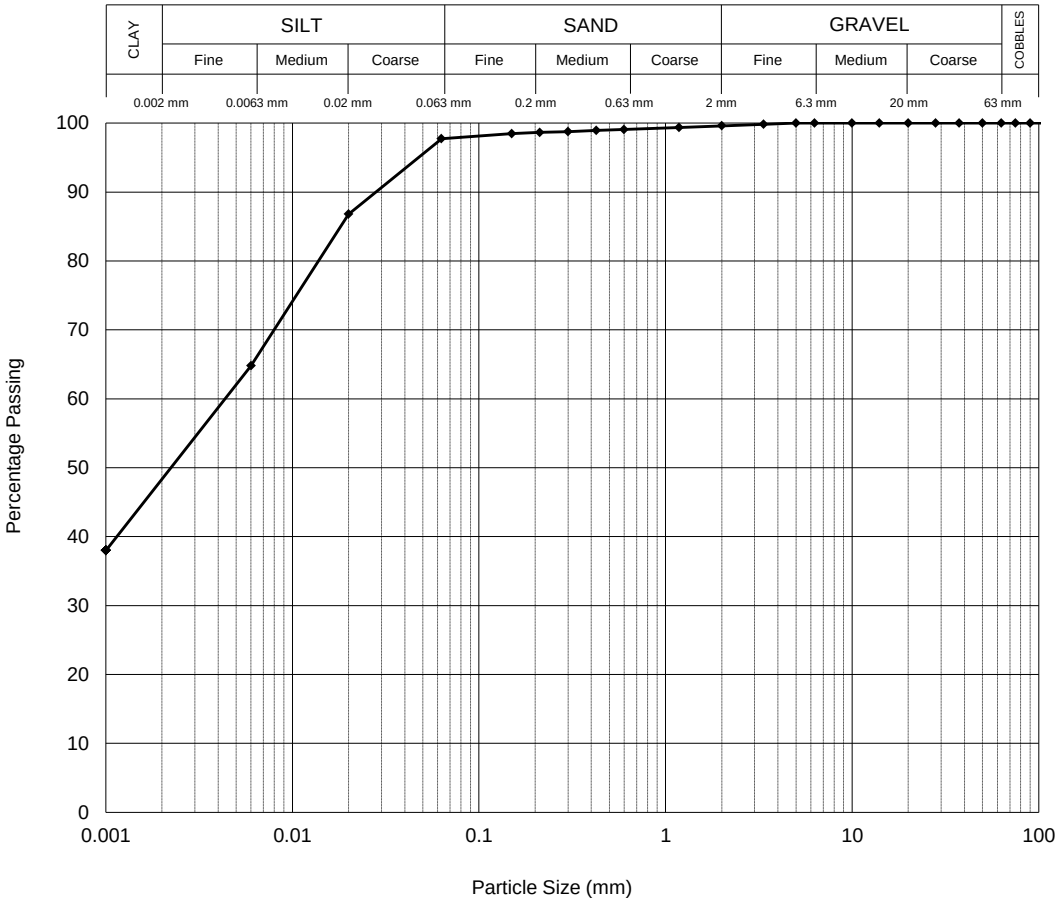
BH / TP No.	GT7
Sample Ref	C4L7

Description

Dark grey slightly micaceous CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	65
1 µm	38

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E4-L2
Sample Type:	C

Description:
Stiff dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.95	99.66
Height	*mm*	100.95	100.66
Moisture Content	*%*	20	23
Bulk Density	*Mg/m³*	2.06	2.13
Dry Density	*Mg/m³*	1.71	1.73

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.54	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	6.9

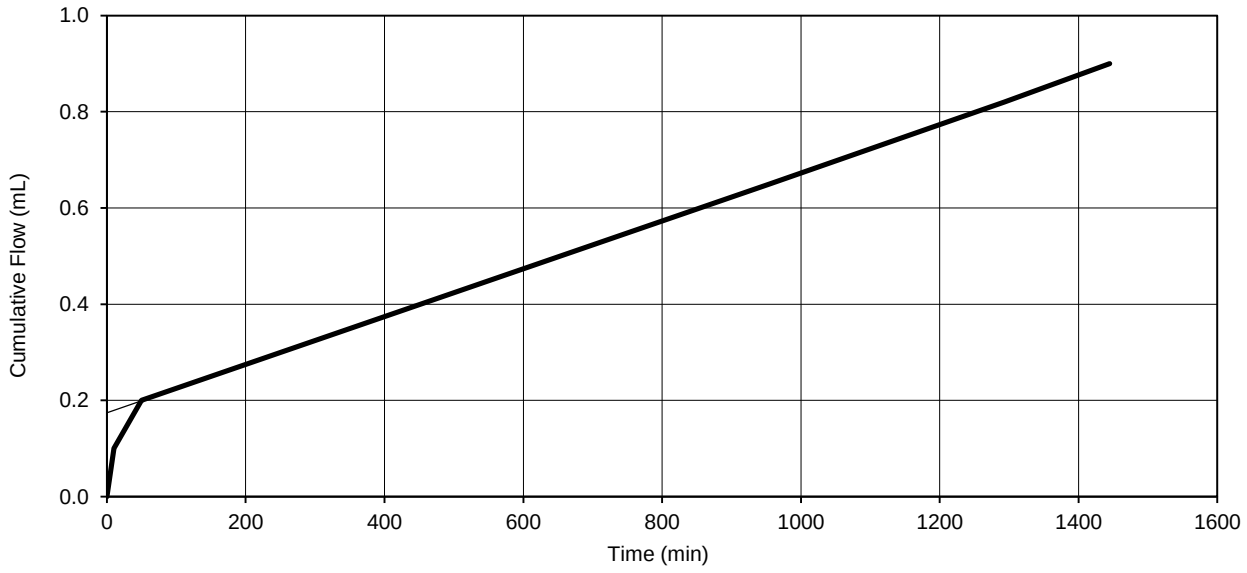
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.1×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
17/09/2018

Project Number:

GEO / 27763

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-9	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.6	100	48	20	28		
E3 L1	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	47	21	26		
E4 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	50	21	29		
E5 L1	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			24.3	100	47	21	26		
F1 L3	GT6	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	47	21	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT5		D4 L-9		Dark grey CLAY and SILT with rare fossil fragments.	2.70	2
GT7		F1L3		Dark grey CLAY and SILT with rare fossil fragments.	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

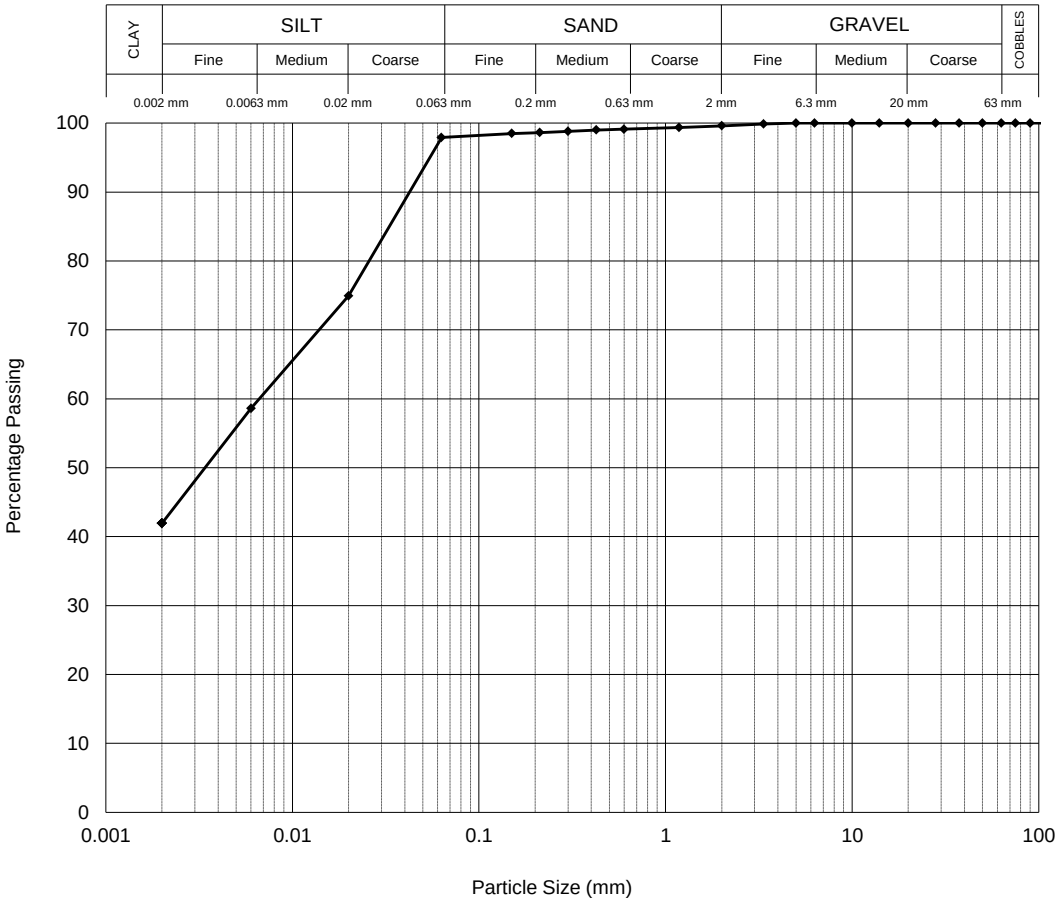
BH / TP No.	GT5
Sample Ref	D4 L-9

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	75
6 µm	59
2 µm	42
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

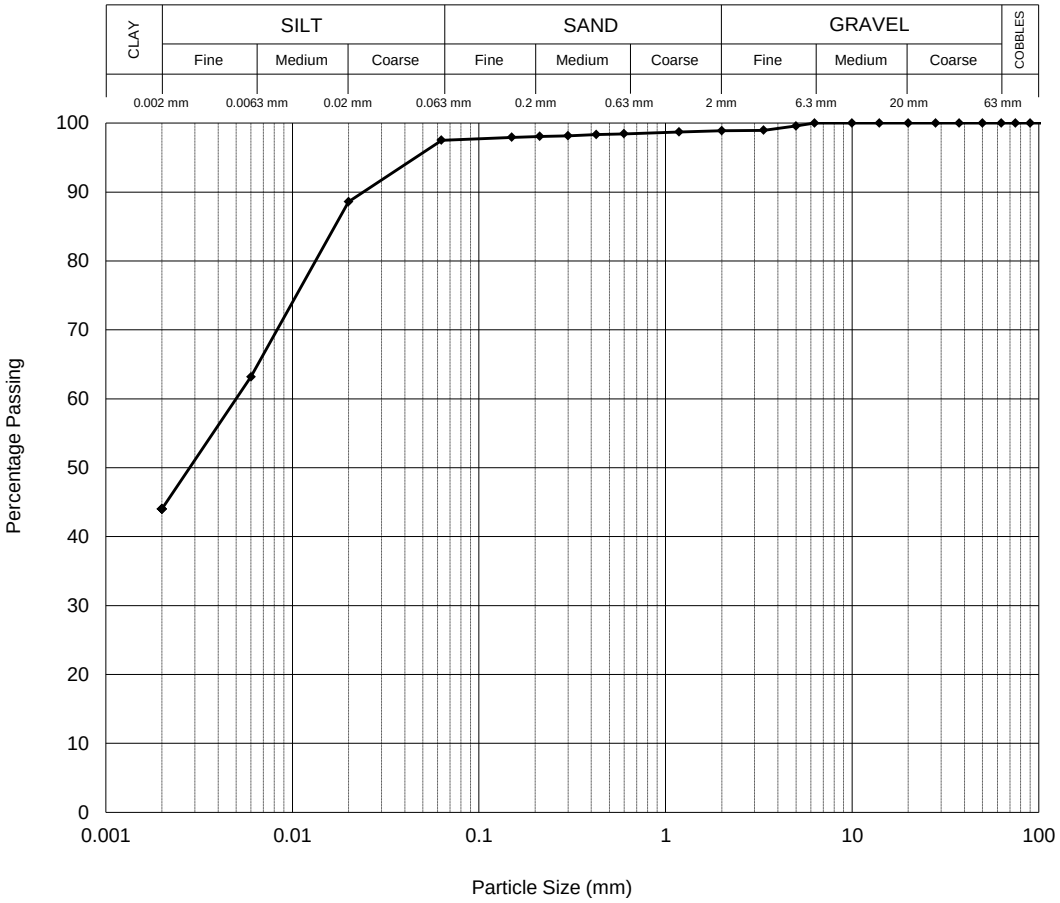
BH / TP No.	GT7
Sample Ref	F1L3

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	63
2 µm	44

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
05/09/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	D4 L-9
Sample Type:	C

Description:
Firm dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.53	99.43
Height	*mm*	100.95	100.85
Moisture Content	*%*	26	27
Bulk Density	*Mg/m³*	1.98	2.00
Dry Density	*Mg/m³*	1.58	1.58

SATURATION STAGE

Saturation initially by constant moisture content.

Pore pressure coefficient ('B' value)		1.00	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	2.4

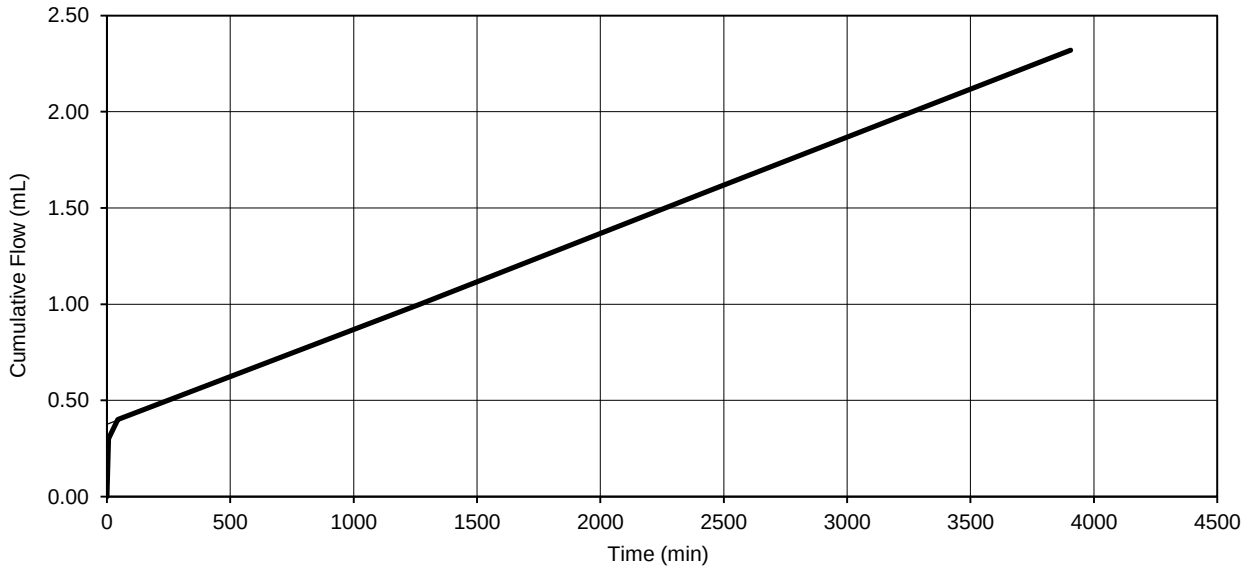
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 1.1×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27761

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D4 L-11	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.0	100	49	21	28		
E4 L2	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.8	100	48	20	28		
E5 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.3	100	47	20	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test: Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit: 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density: sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1 sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E4L2		Dark grey CLAY and SILT with rare medium gravel and fossil fragments.	2.66	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF (Ref 1536075363)

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

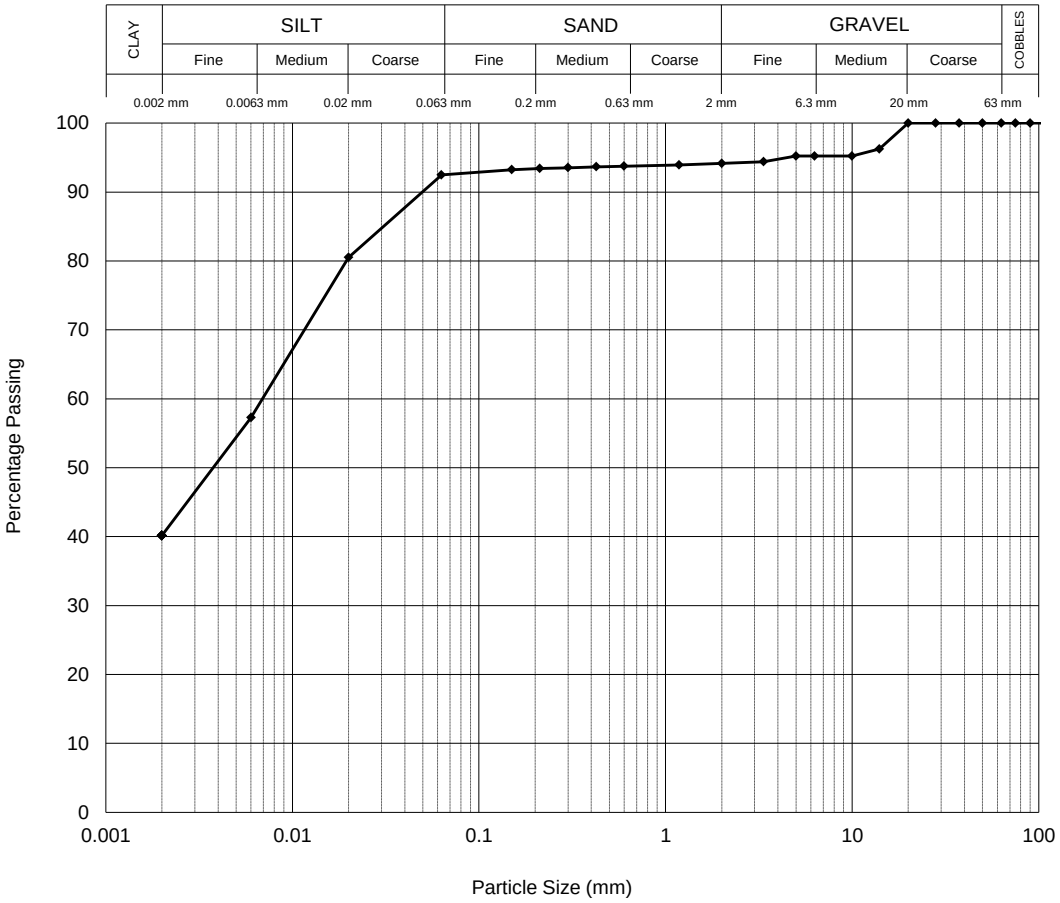
BH / TP No.	GT1
Sample Ref	E4L2

Description

Dark grey CLAY and SILT with rare medium gravel and fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	96
10.0 mm	95
6.30 mm	95
5.00 mm	95
3.35 mm	94
2.00 mm	94
1.18 mm	94
600 µm	94
425 µm	94
300 µm	94
212 µm	93
150 µm	93
63 µm	92



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	57
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	6
Sand	2
Silt	52
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E5L2
Sample Type:	C

Description:
Stiff dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.75	99.16
Height	*mm*	101.78	101.19
Moisture Content	*%*	21	25
Bulk Density	*Mg/m³*	2.04	2.13
Dry Density	*Mg/m³*	1.68	1.71

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.22	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	14.0

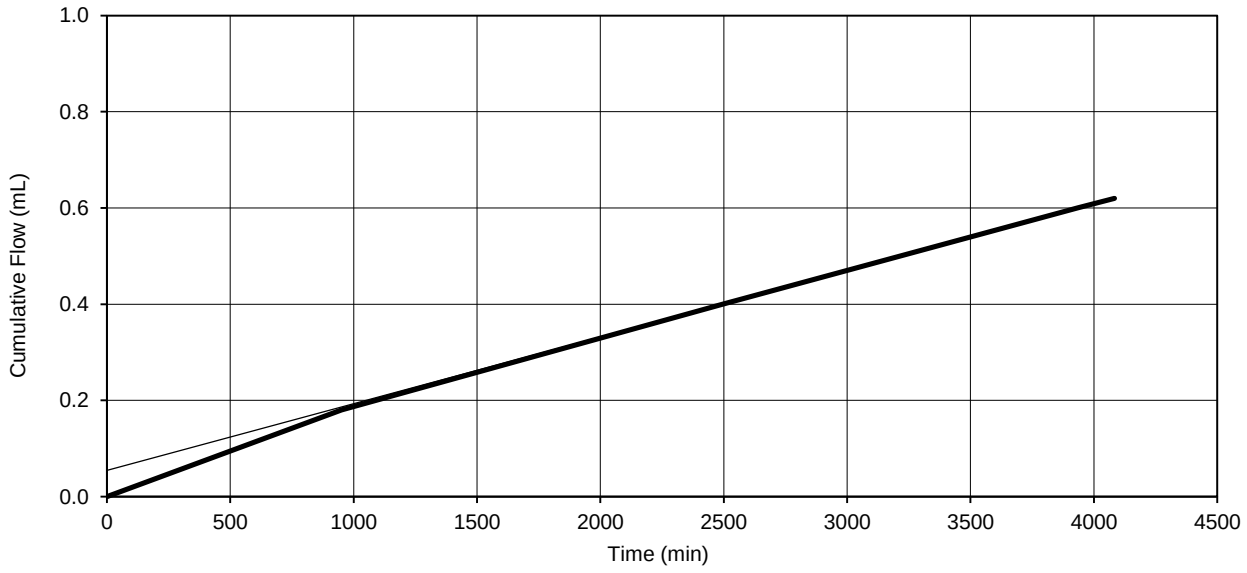
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 3.0×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
17/09/2018

Project Number:

GEO / 27764

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C4 L1	GT7	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.5	100	48	21	27		
E2 L3	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.1	100	49	22	27		
E3 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.6	100	49	22	27		
E4 L3	GT2	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			19.3	100	51	22	29		
E5 L3	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		E2L3	BB	Dark grey silty CLAY	2.69	2
GT6		E5L3	BB	Dark grey silty CLAY	2.67	2
GT8		C4L1	BB	Dark grey silty CLAY	2.67	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

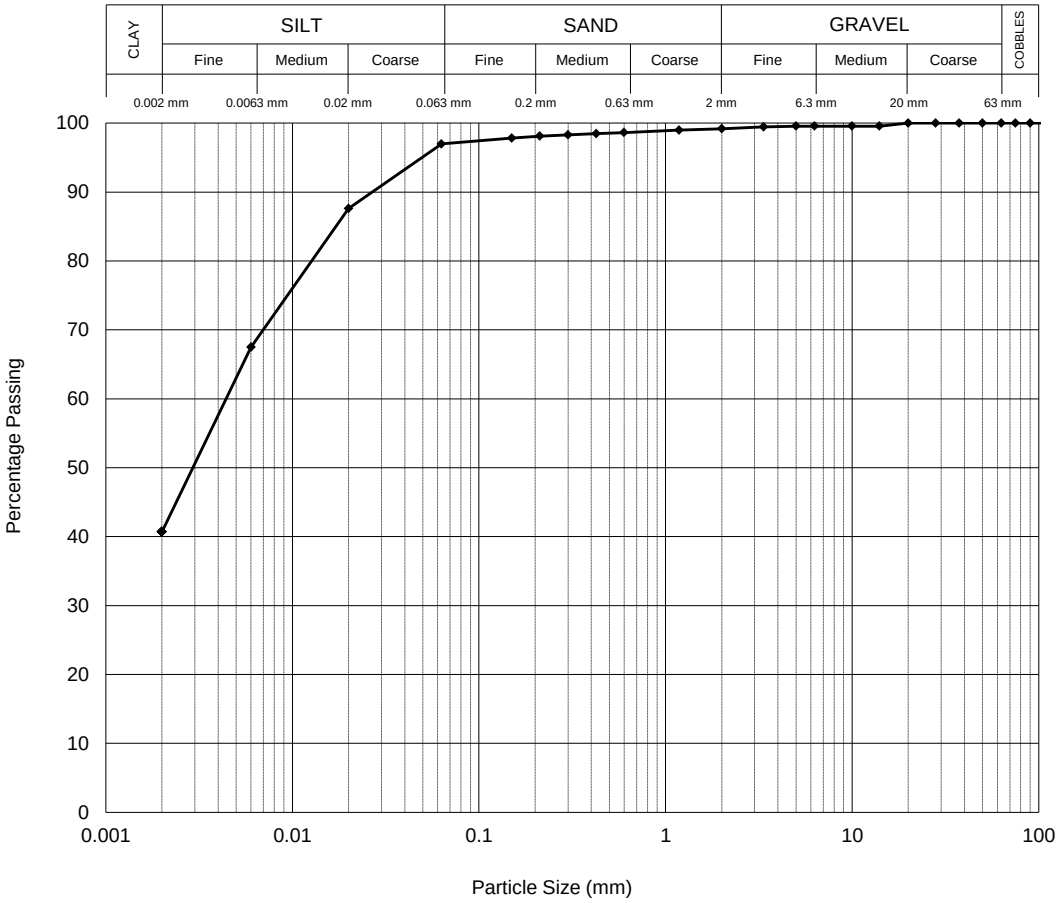
BH / TP No.	GT3
Sample Ref	E2L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	67
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

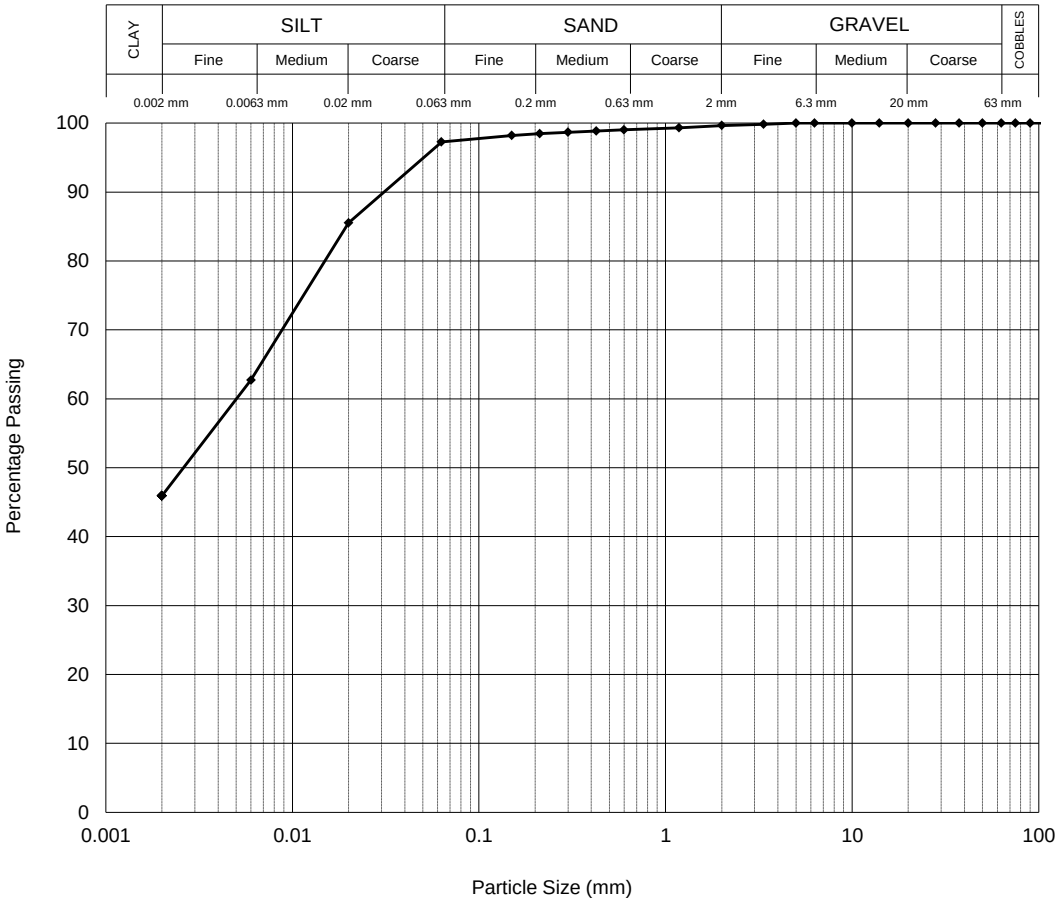
BH / TP No.	GT6
Sample Ref	E5L3
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	46

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	51
Clay	47

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

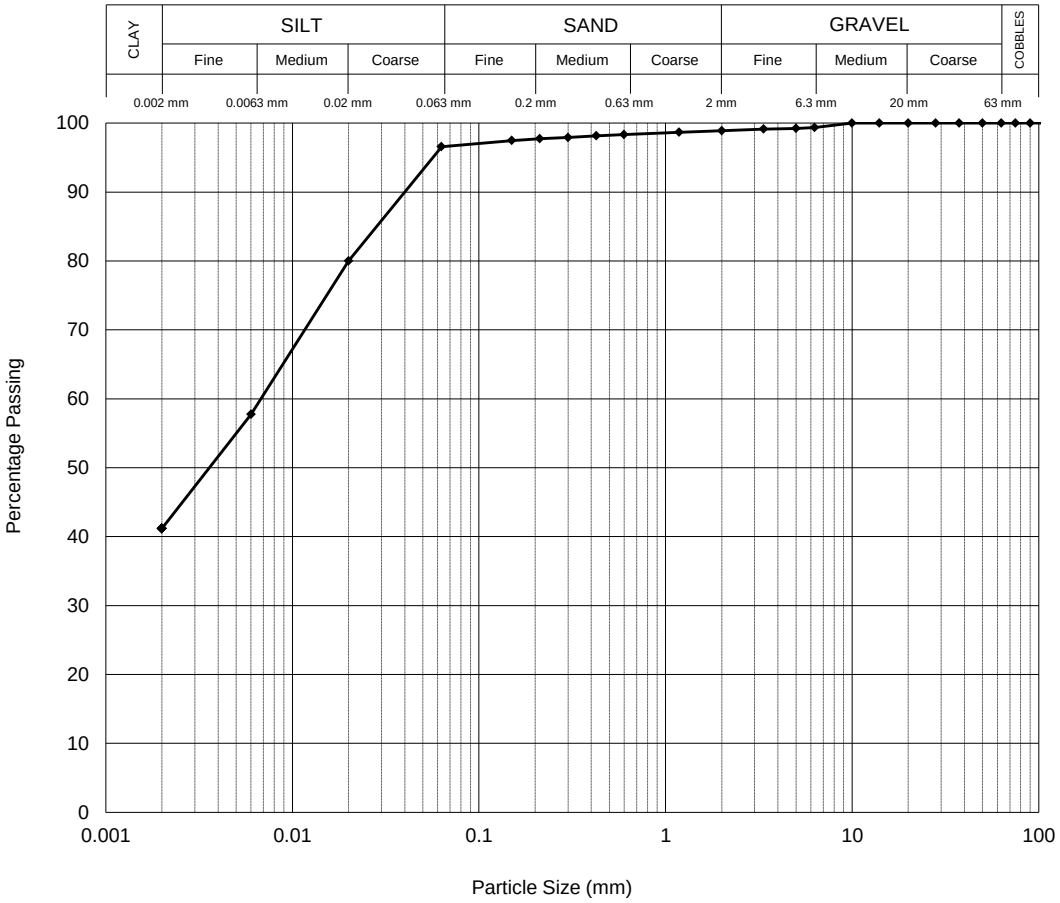
BH / TP No.	GT8
Sample Ref	C4L1
Sample Type	BB

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	55
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
13/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E3L3
Sample Type:	C

Description:
Firm dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	100.69	100.40
Height	*mm*	99.87	99.57
Moisture Content	*%*	24	26
Bulk Density	*Mg/m³*	2.00	2.05
Dry Density	*Mg/m³*	1.62	1.63

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.37	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	7.0

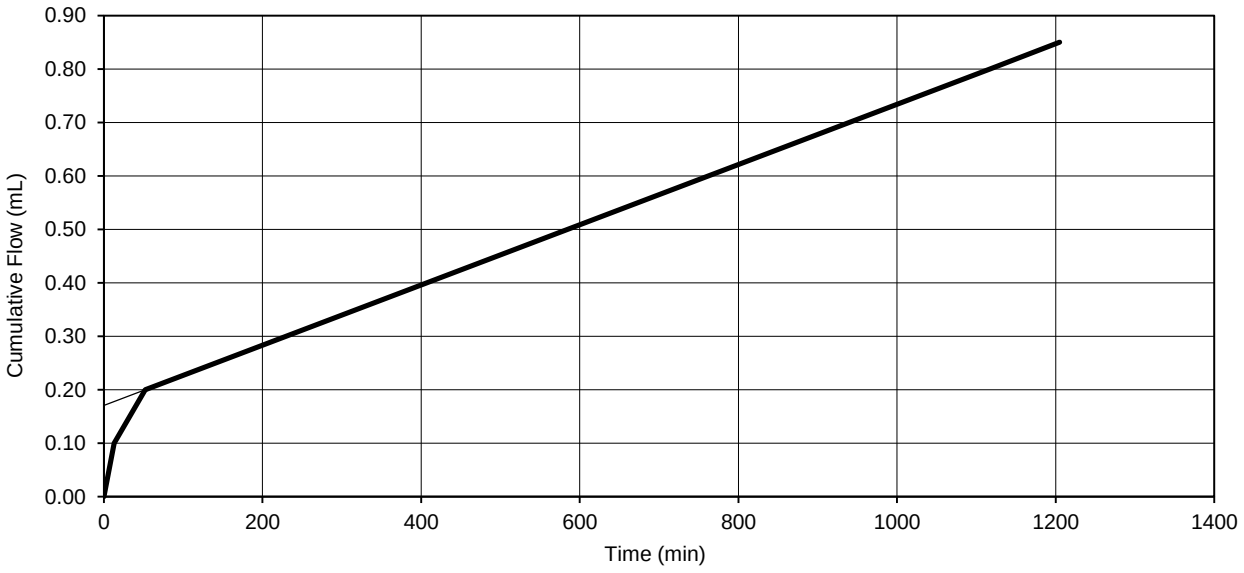
PERMEABILITY STAGE

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.2×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
31/08/2018

Project Number:

GEO / 27814

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
D3 L1	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	49	21	28		
G2 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.2	100	50	21	29		
G3 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.1	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 08/08/2018 00:00

Approved By: Lisa Maiden

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		D3L1	B	Dark grey clayey SILT with rare fossil fragments.	2.70	2
GT4		G2L4	B	Dark grey CLAY and SILT with rare fossil fragments.	2.73	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

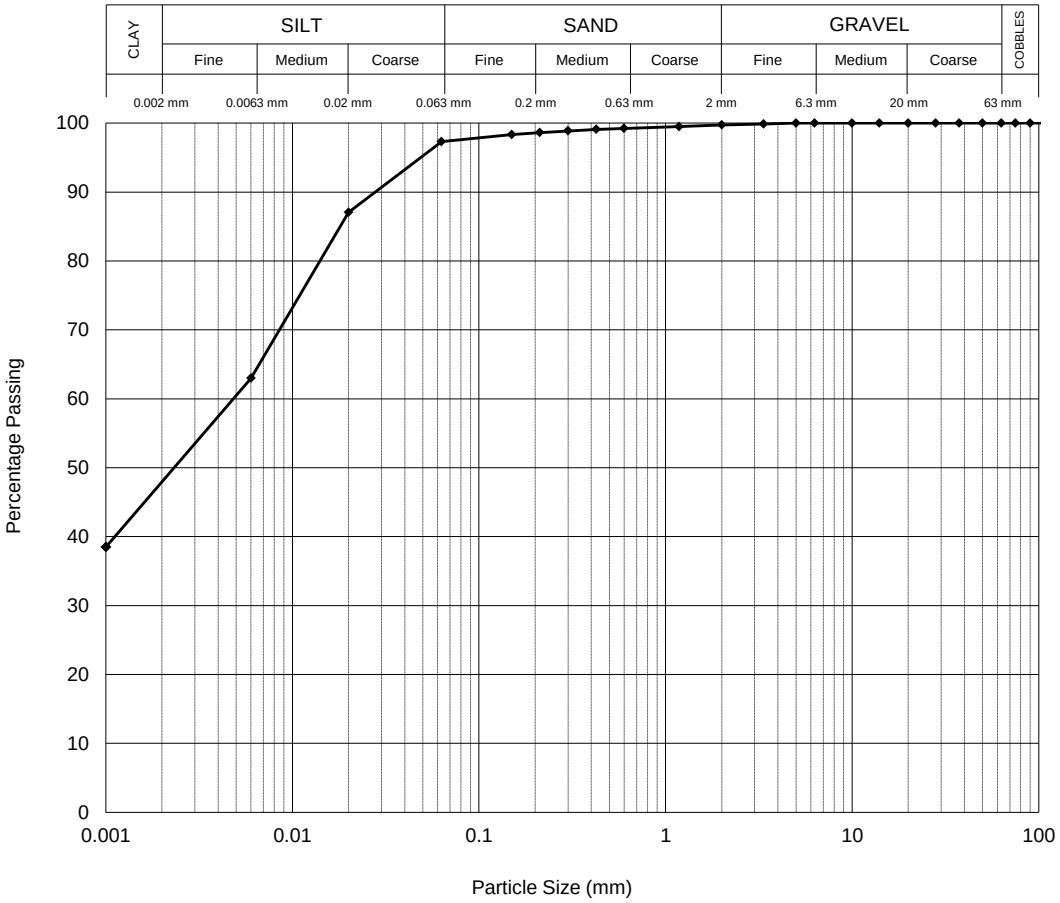
BH / TP No.	GT2
Sample Ref	D3L1
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	63
1 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	54
Clay	44

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

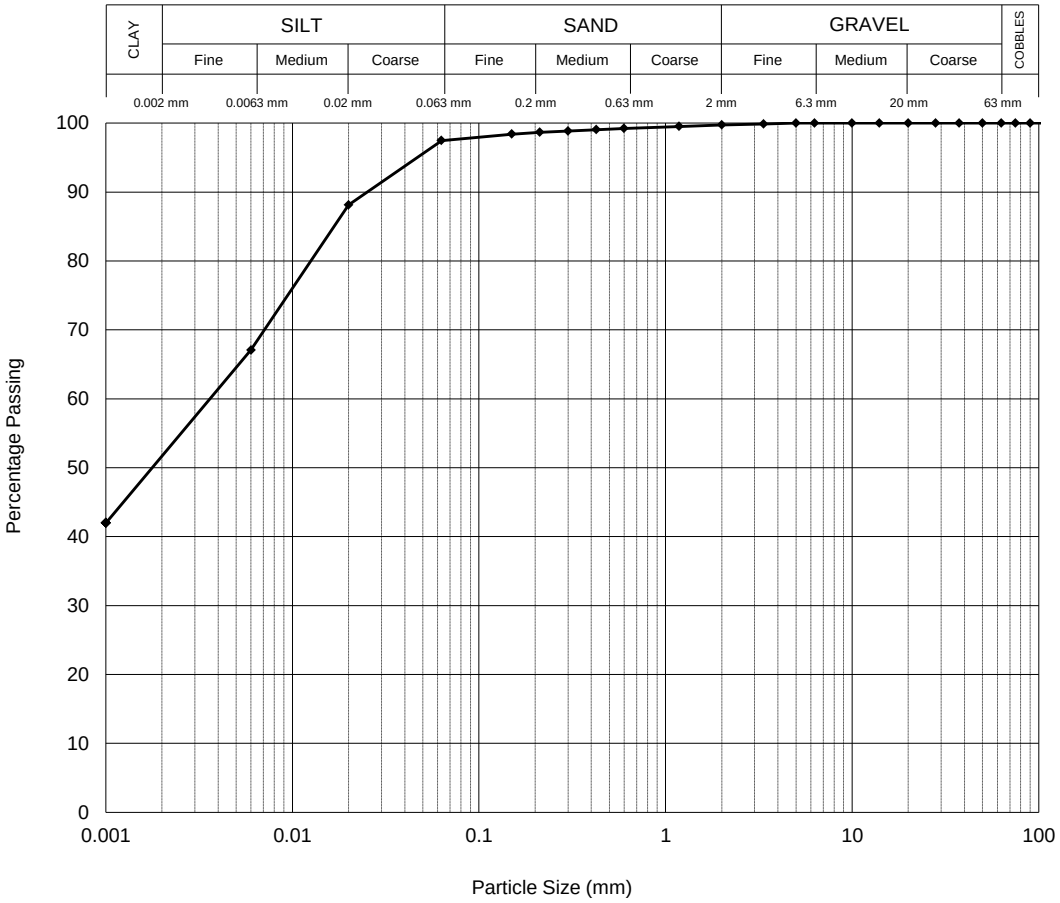
BH / TP No.	GT4
Sample Ref	G2L4
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	88
6 µm	67
1 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	50
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
20/08/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	D3L1
Sample Type:	C

Description:
Firm grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.55	99.25
Height	*mm*	100.78	100.47
Moisture Content	*%*	25	27
Bulk Density	*Mg/m³*	1.99	2.03
Dry Density	*Mg/m³*	1.59	1.60

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.49	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	7.2

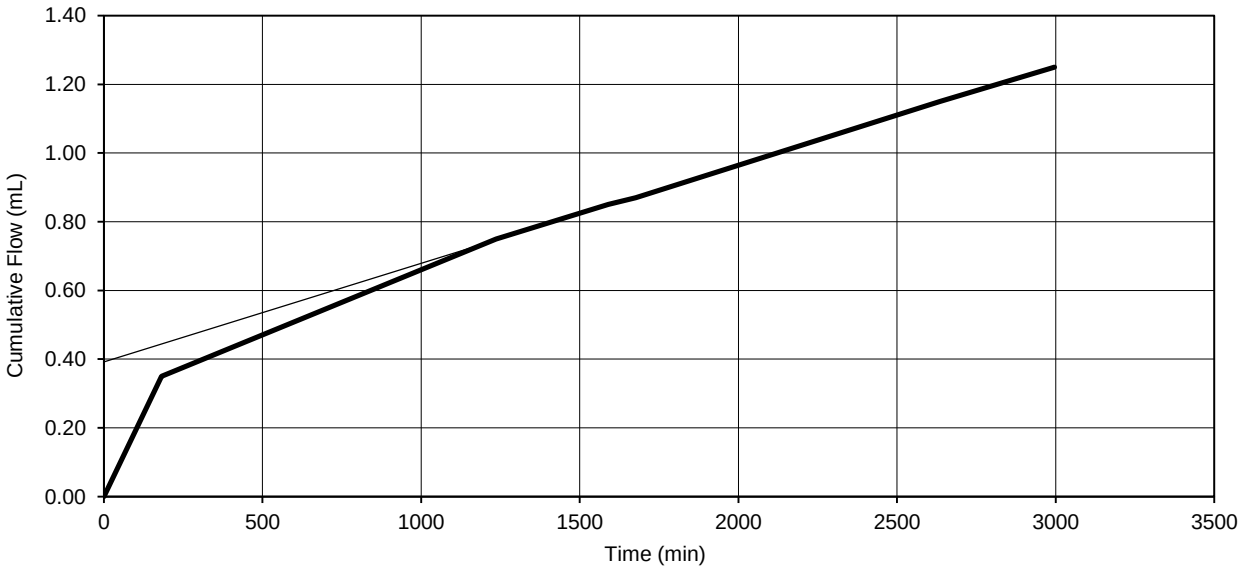
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.1
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	7
Consolidation	*days*	1
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 6.1×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
24/09/2018

Project Number:

GEO / 27840

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m3		%	%	%	%	%	Mg/m3	
E1 L4	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.2	100	50	21	29		
E2 L4	GT4	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.4	100	47	21	26		
F4 L4	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			23.3	100	49	22	27		
F5 L3	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			21.8	99	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
08/08/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		F5-L3	B	Dark grey clayey SILT with rare fossil fragments.	2.67	2
GT6		F4-L4	B	Dark grey CLAY and SILT with rare fossil fragments.	2.67	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

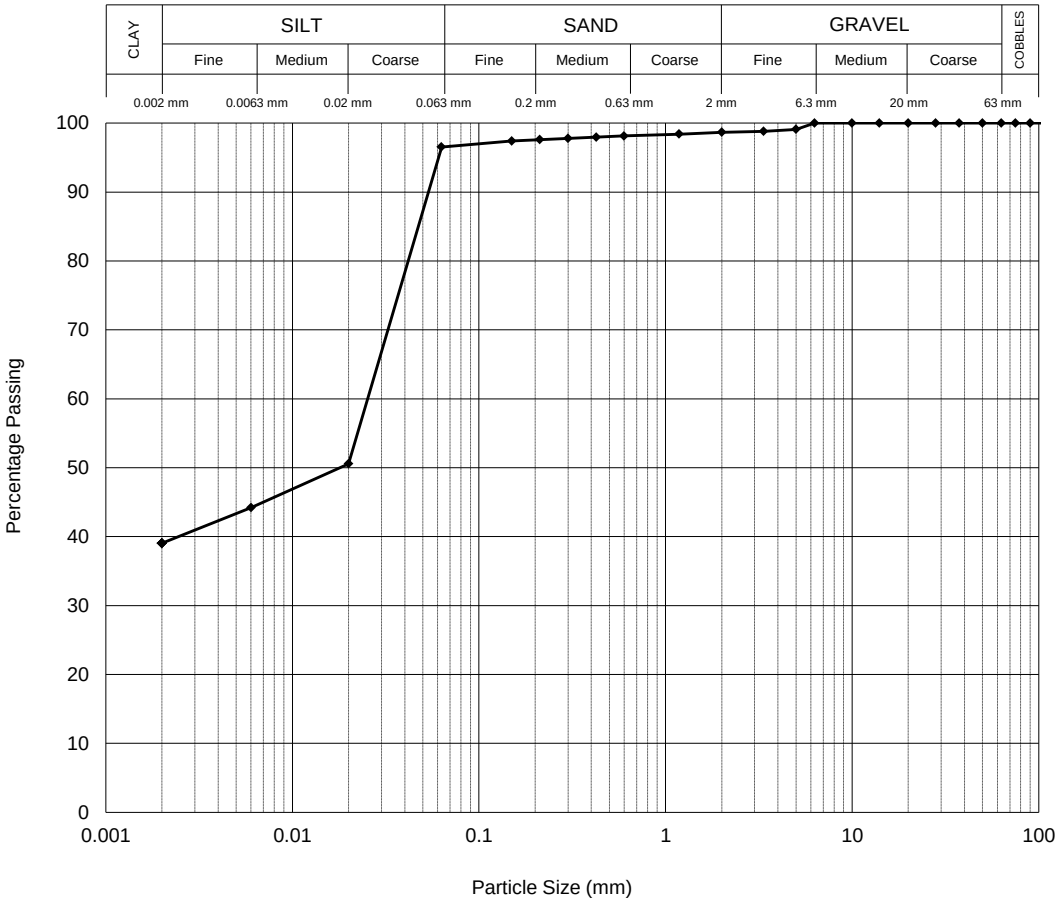
BH / TP No.	GT2
Sample Ref	F5-L3
Sample Type	B

Description

Dark grey clayey SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	51
6 µm	44
2 µm	39

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	58
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

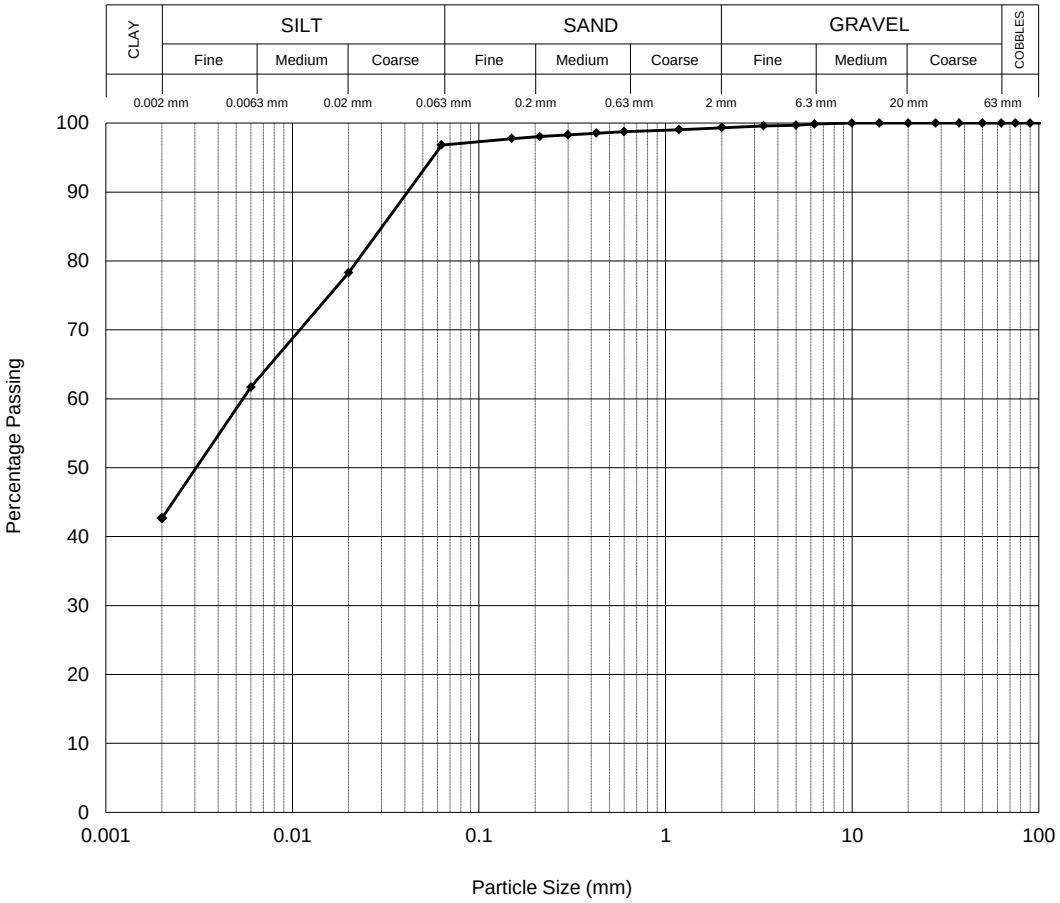
BH / TP No.	GT6
Sample Ref	F4-L4
Sample Type	B

Description

Dark grey CLAY and SILT with rare fossil fragments.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	62
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	54
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
22/08/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E2-L4
Sample Type:	C

Description:
Stiff fissured grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.67	99.34
Height	*mm*	100.52	100.19
Moisture Content	*%*	21	24
Bulk Density	*Mg/m³*	2.05	2.13
Dry Density	*Mg/m³*	1.70	1.72

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.24	0.97

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	7.8

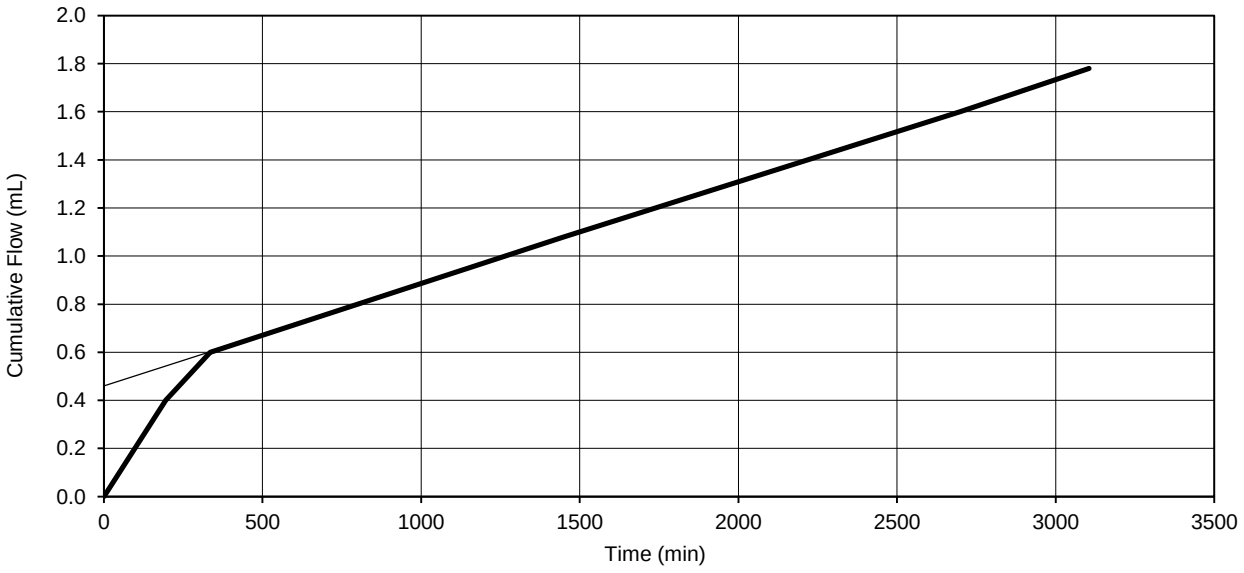
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	6
Consolidation	*days*	1
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 9.0×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
24/09/2018

Project Number:

GEO / 27841

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		w %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
F1 L5	GT1	0.00		B	Dark grey slightly sandy CLAY			22.1	100	47	21	26		
F2 L5	GT2	0.00		B	Dark grey slightly sandy CLAY			23.0	100	49	21	28		
F3 L5	GT10	0.00		B	Dark grey slightly sandy CLAY			20.6	100	47	20	27		
G2 L5	GT4	0.00		B	Dark grey slightly sandy CLAY			23.1	100	51	22	29		
G3 L5	GT8	0.00		B	Dark grey slightly sandy CLAY			21.9	100	46	20	26		
G4 L5	GT9	0.00		B	Dark grey slightly sandy CLAY			23.0	100	48	20	28		
G5 L4	GT3	0.00		B	Dark grey slightly sandy CLAY			20.4	100	49	21	28		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
15/08/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT11		F3L5	B	Dark grey silty CLAY	2.66	2
GT5		G2L5	B	Dark grey silty CLAY	2.70	2
GT6		G4L5	B	Dark grey clayey SILT	2.69	2
GT7		G5L4	B	Dark grey clayey SILT	2.72	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

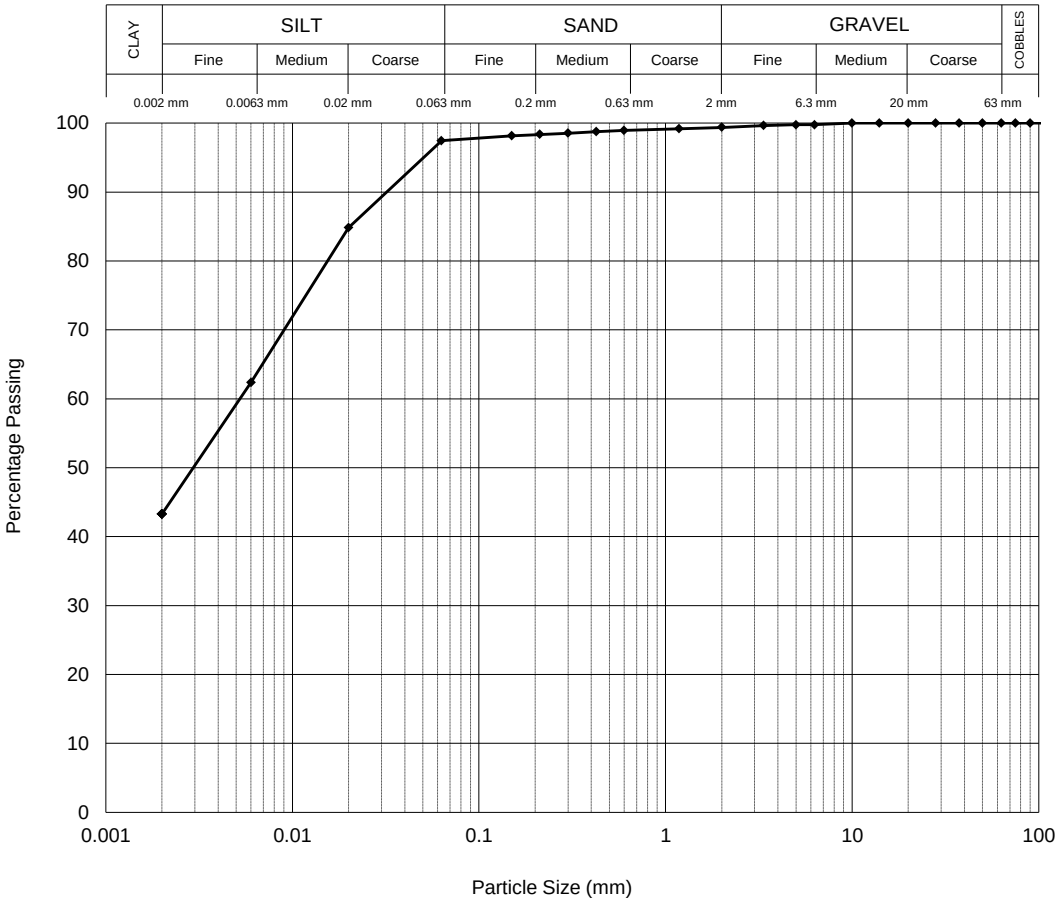
BH / TP No.	GT5
Sample Ref	G2L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	62
2 µm	43

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	54
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

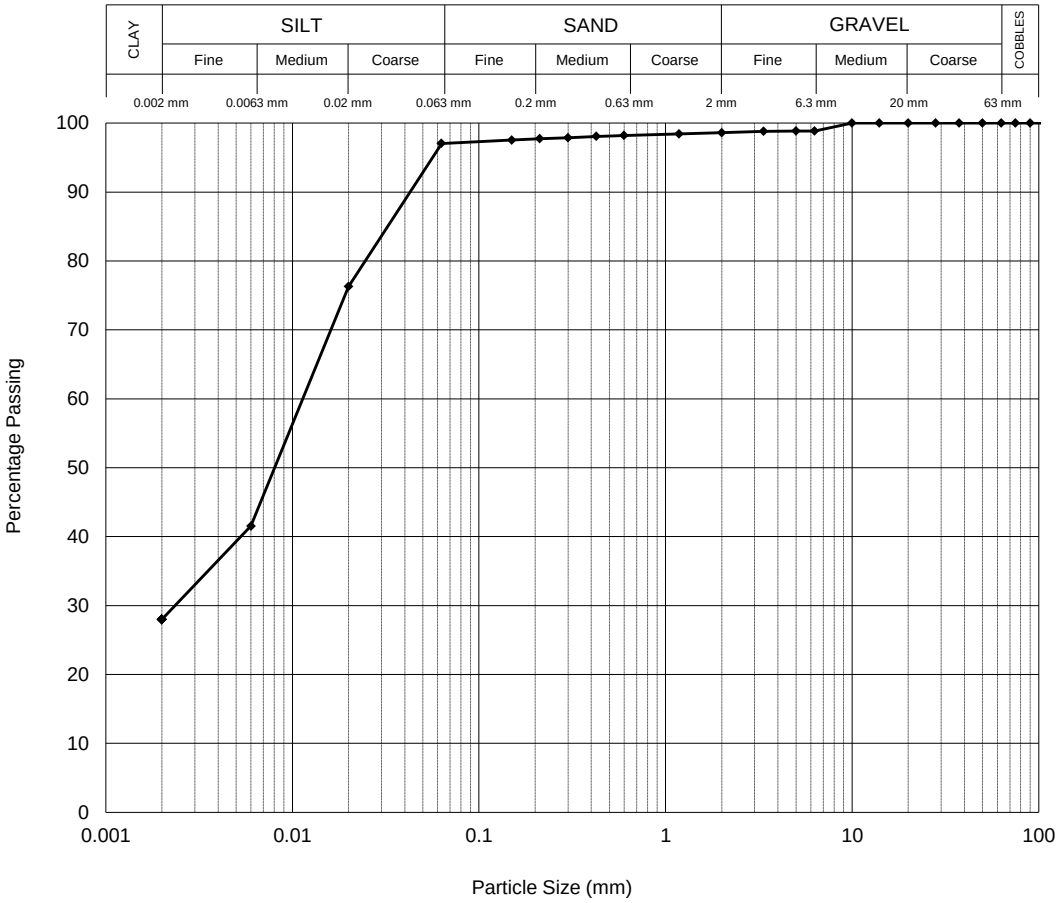
BH / TP No.	GT6
Sample Ref	G4L5
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	98
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	42
2 µm	28

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	69
Clay	28

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

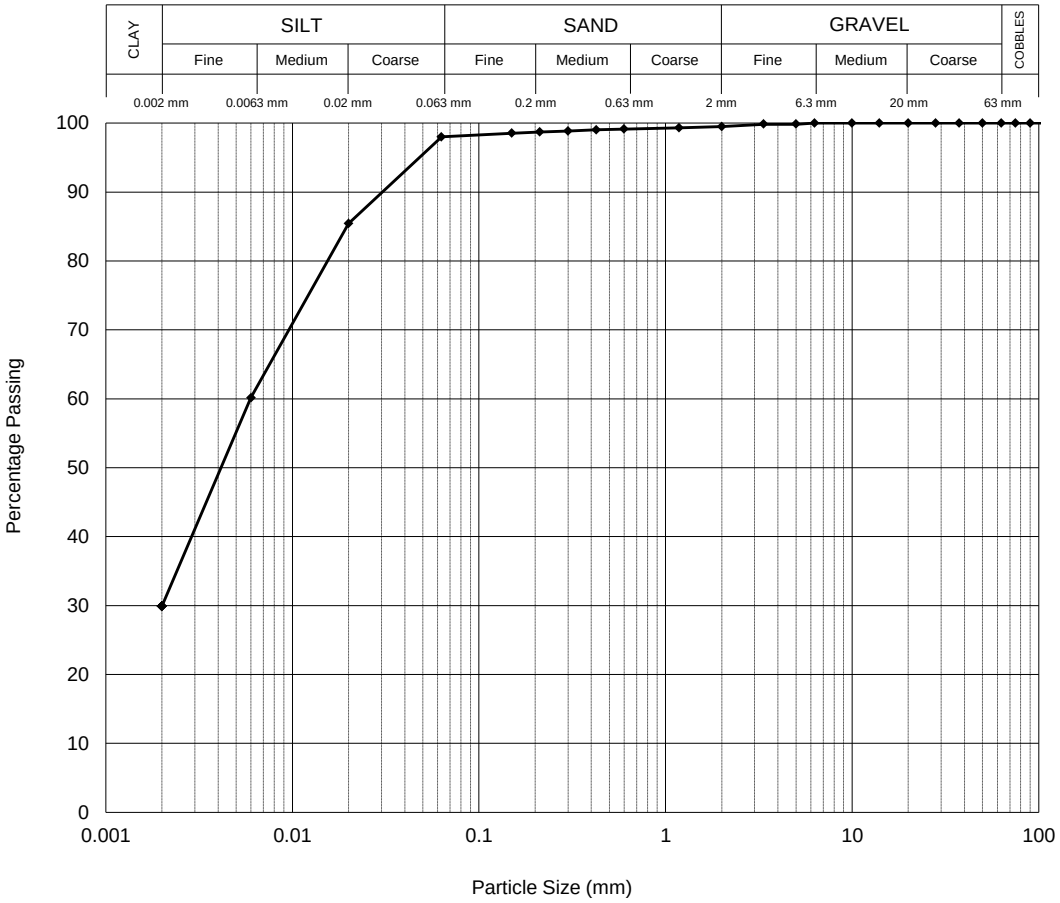
BH / TP No.	GT7
Sample Ref	G5L4
Sample Type	B

Description

Dark grey clayey SILT

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	60
2 µm	30

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	68
Clay	30

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

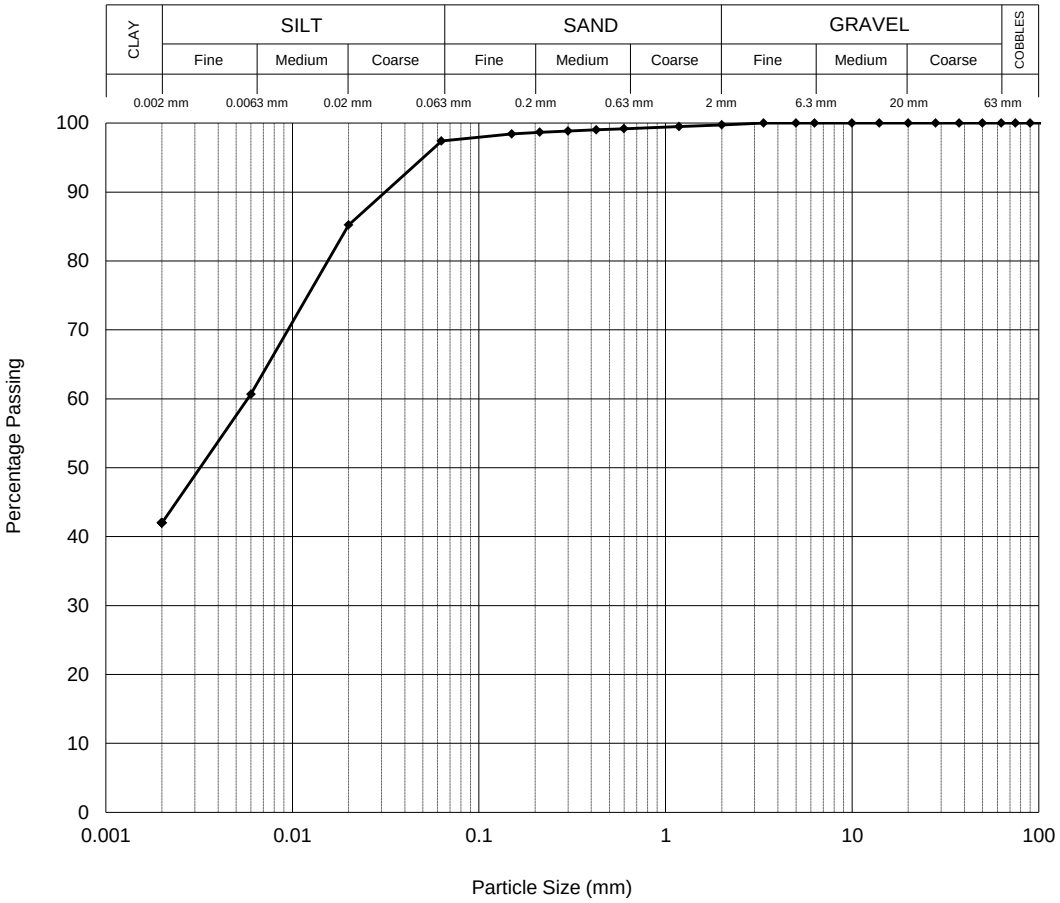
BH / TP No.	GT11
Sample Ref	F3L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	42
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	55
Clay	43

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	F2L5
Sample Type:	C

Description:
Stiff fissured dark grey CLAY. Rare shell fragements up to 10mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	102.18	102.12
Height	*mm*	99.55	99.50
Moisture Content	*%*	22	24
Bulk Density	*Mg/m³*	1.96	2.01
Dry Density	*Mg/m³*	1.61	1.62

SATURATION STAGE

Saturation by constant moisture content.

Pore pressure coefficient ('B' value)		1.00	1.00

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	1.4

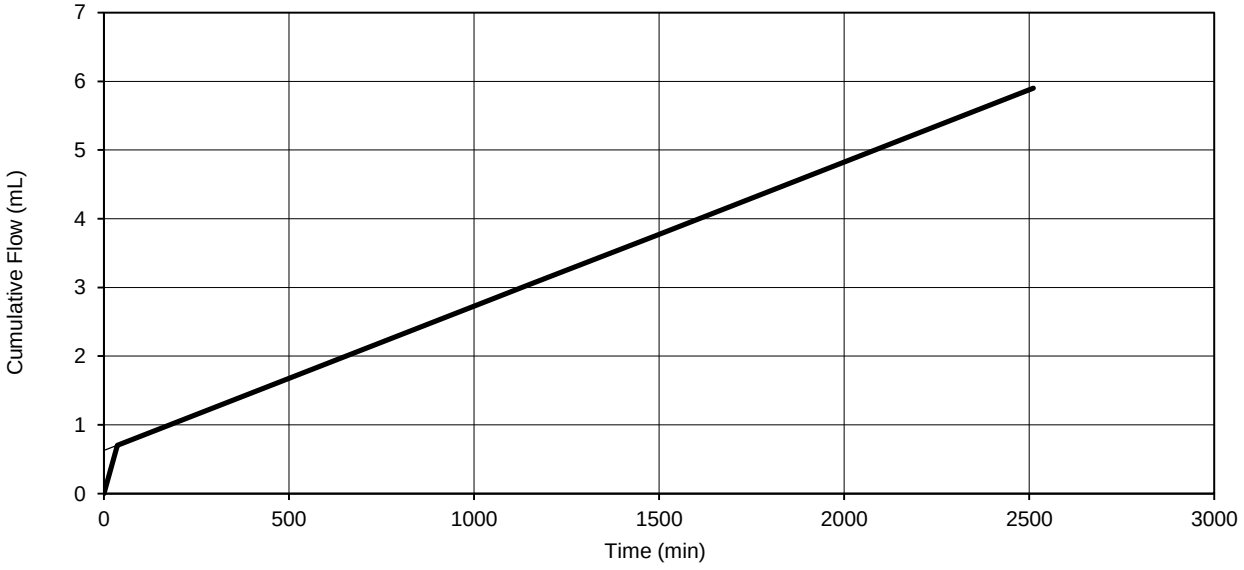
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	1
Consolidation	*days*	1
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 4.2×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
17/09/2018

Project Number:

GEO / 27864

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT1		E3L5	B	Dark grey silty CLAY	2.68	2
GT5		E5L5	B	Dark grey silty CLAY	2.69	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

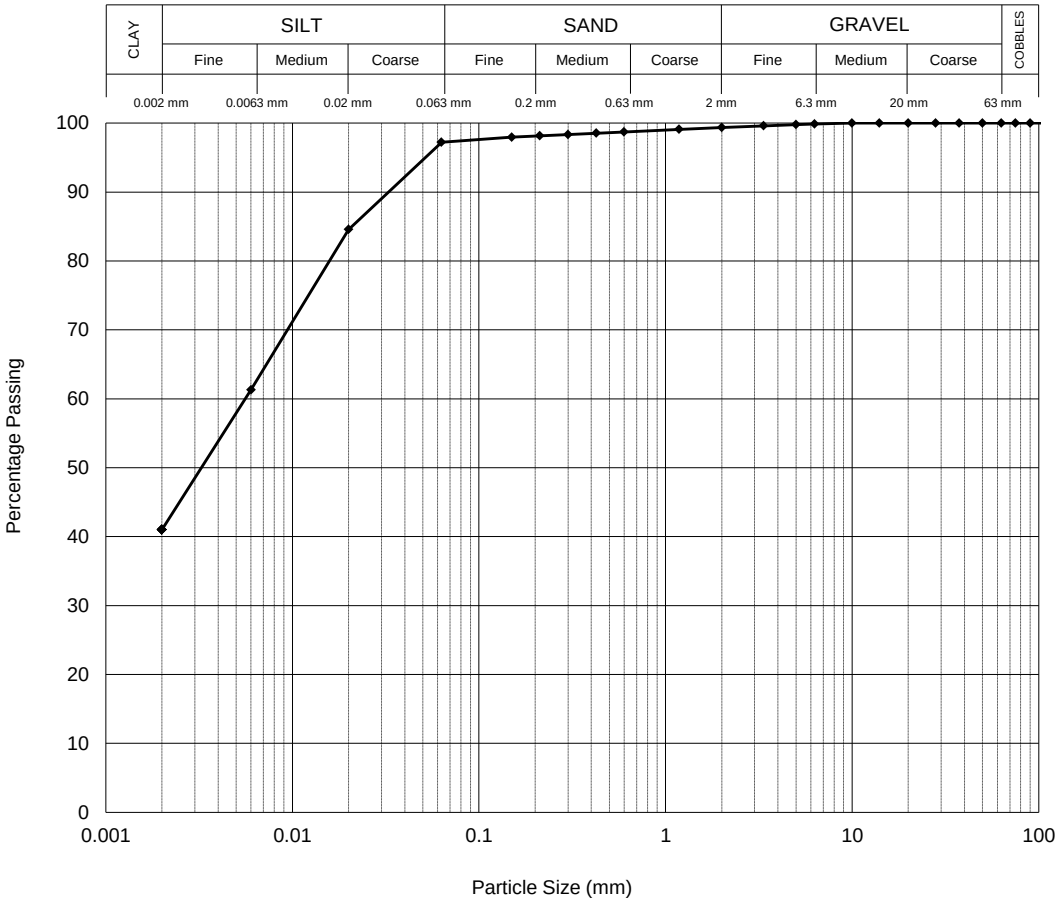
BH / TP No.	GT1
Sample Ref	E3L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	61
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

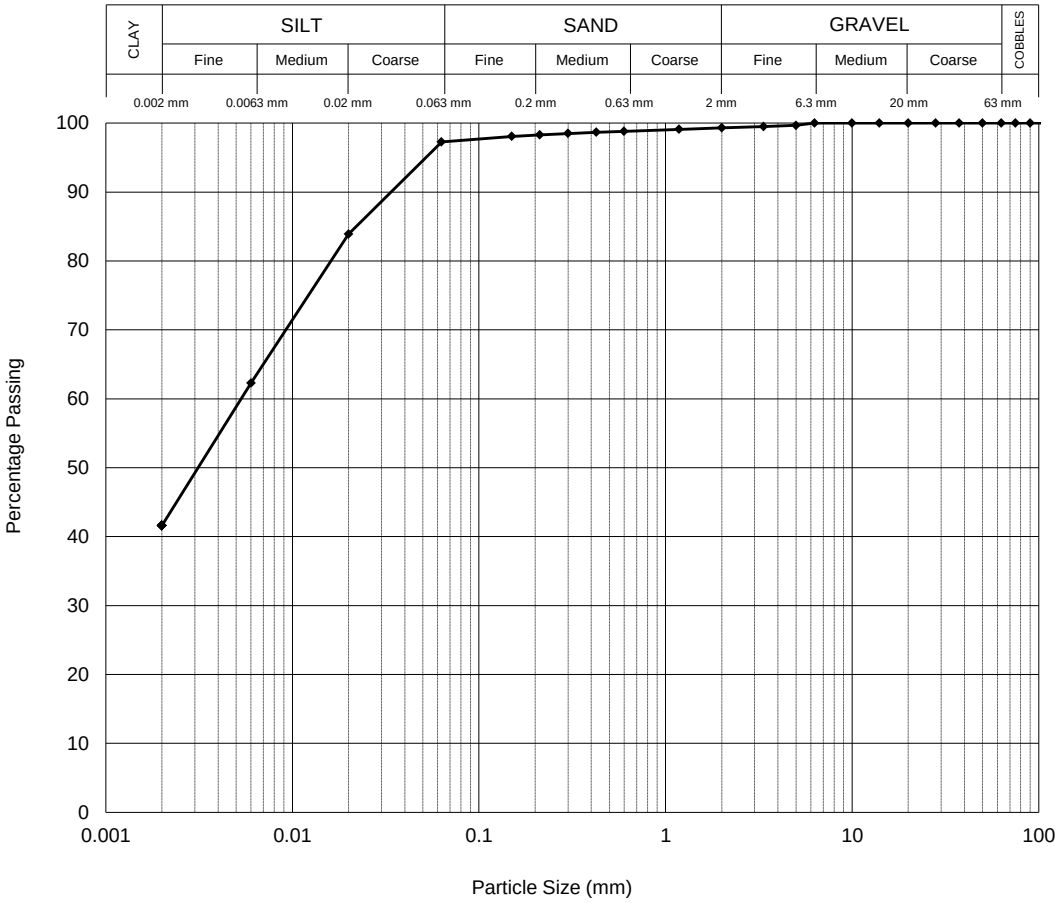
BH / TP No.	GT5
Sample Ref	E5L5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	84
6 µm	62
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
24/08/2018

Project Number:

GEO / 27869

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	E3L5
Sample Type:	C

Description:
Stiff dark grey CLAY with rare fine gravel.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	98.94	98.52
Height	*mm*	100.12	99.70
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.04	2.11
Dry Density	*Mg/m³*	1.66	1.69

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.36	0.99

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	9.8

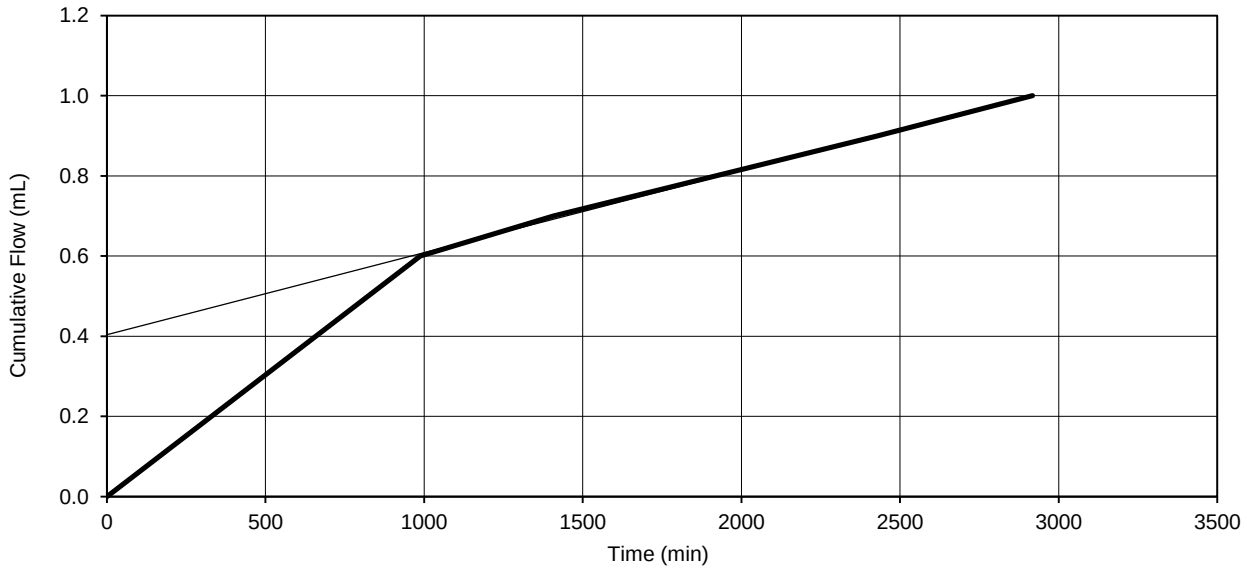
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	5
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 4.4×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
09/10/2018

Project Number:

GEO / 27931

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		F2L6	B	Dark grey silty CLAY	2.70	2
GT6		F3L6	B	Dark grey silty CLAY	2.68	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

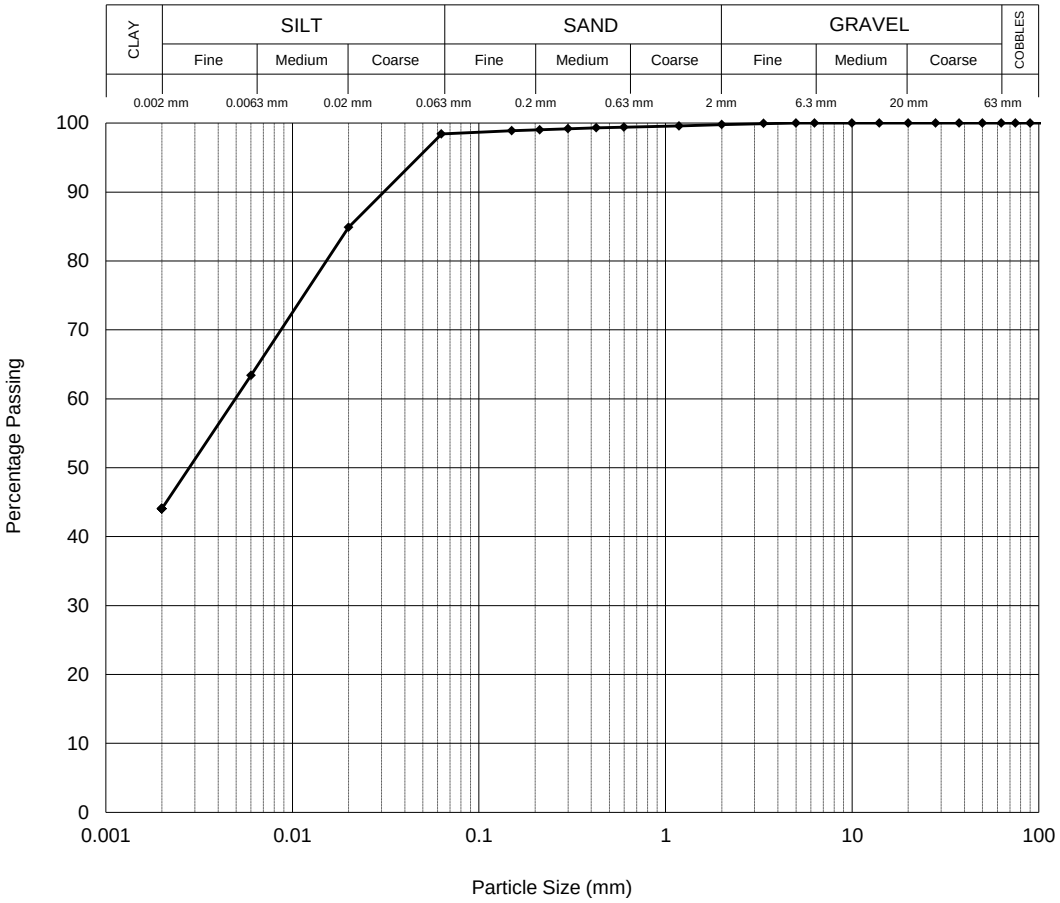
BH / TP No.	GT3
Sample Ref	F2L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	85
6 µm	63
2 µm	44
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	54
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

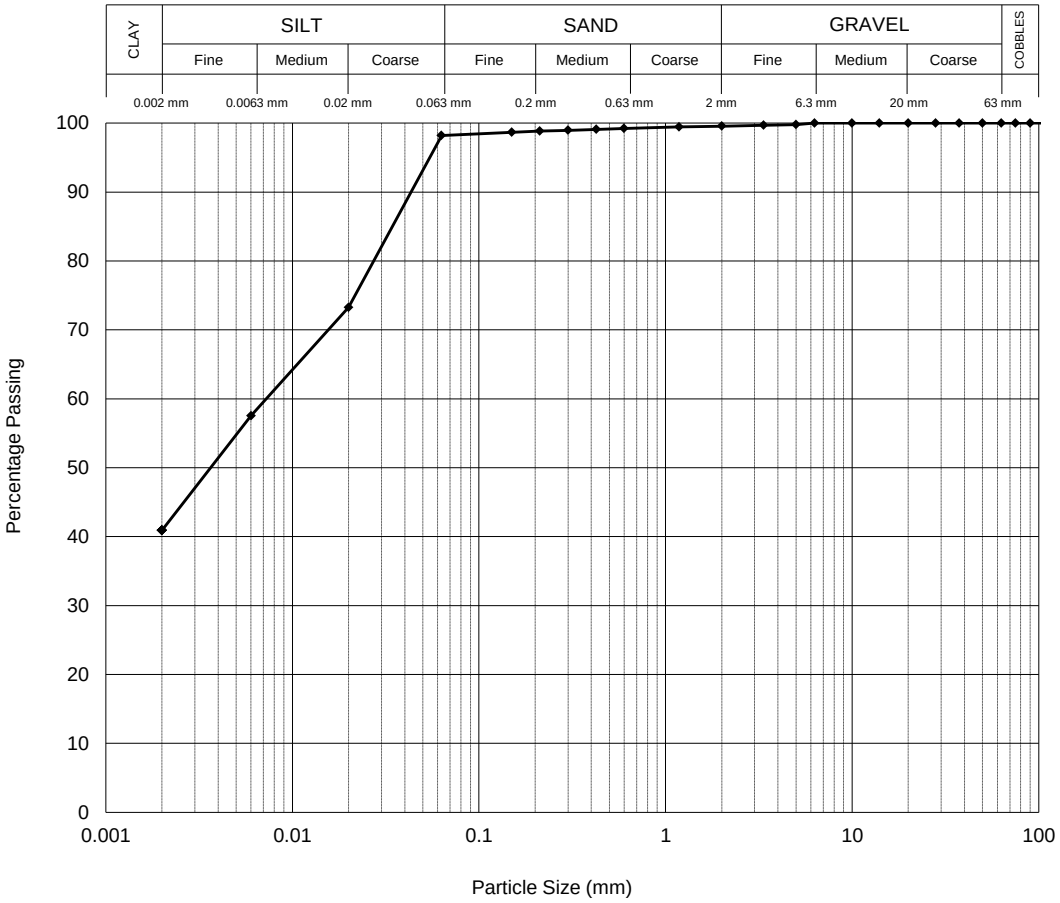
BH / TP No.	GT6
Sample Ref	F3L6
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	73
6 µm	58
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	57
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
04/09/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Sample Ref.:	G2L6
Sample Type:	C

Description:
Stiff dark grey CLAY.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.35	99.15
Height	*mm*	99.22	99.02
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.07	2.12
Dry Density	*Mg/m³*	1.69	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.64	0.96

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	4.8

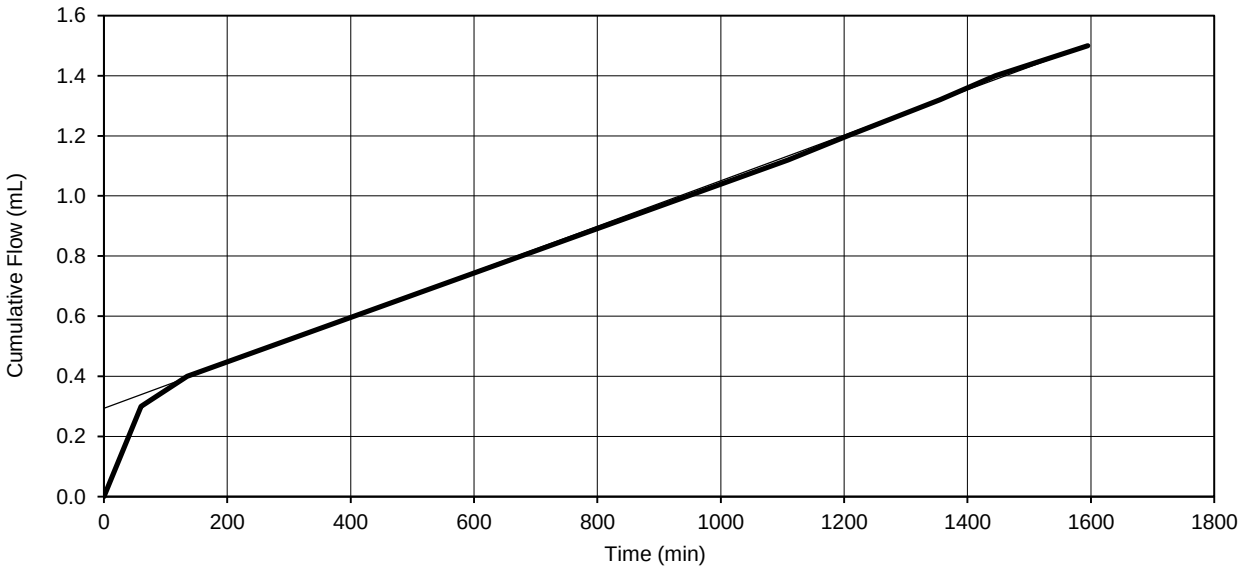
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	1
Flow	*days*	1

Coefficient of Permeability
k_v at 20 °C = 1.6×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
09/10/2018

Project Number:

GEO / 27930

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
B1 L2	GT5	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	46	21	25		
C1 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.6	100	46	22	24		
D1 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.5	100	47	22	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
09/02/2018 00:00	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		C1L7	B	Dark grey clayey SILT.	2.66	2
GT4		D1L7	B	Dark grey CLAY and SILT.	2.70	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

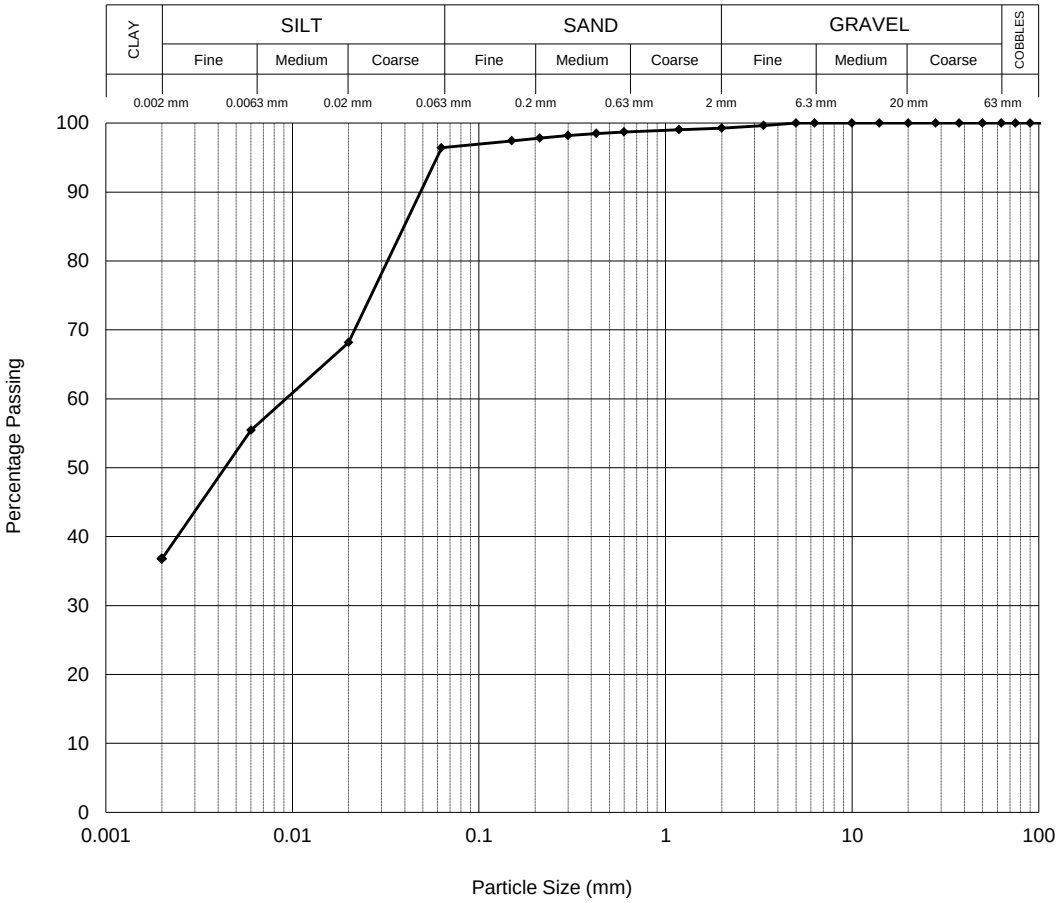
BH / TP No.	GT2
Sample Ref	C1L7
Sample Type	B

Description

Dark grey clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	98
300 µm	98
212 µm	98
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	68
6 µm	55
2 µm	37
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	60
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

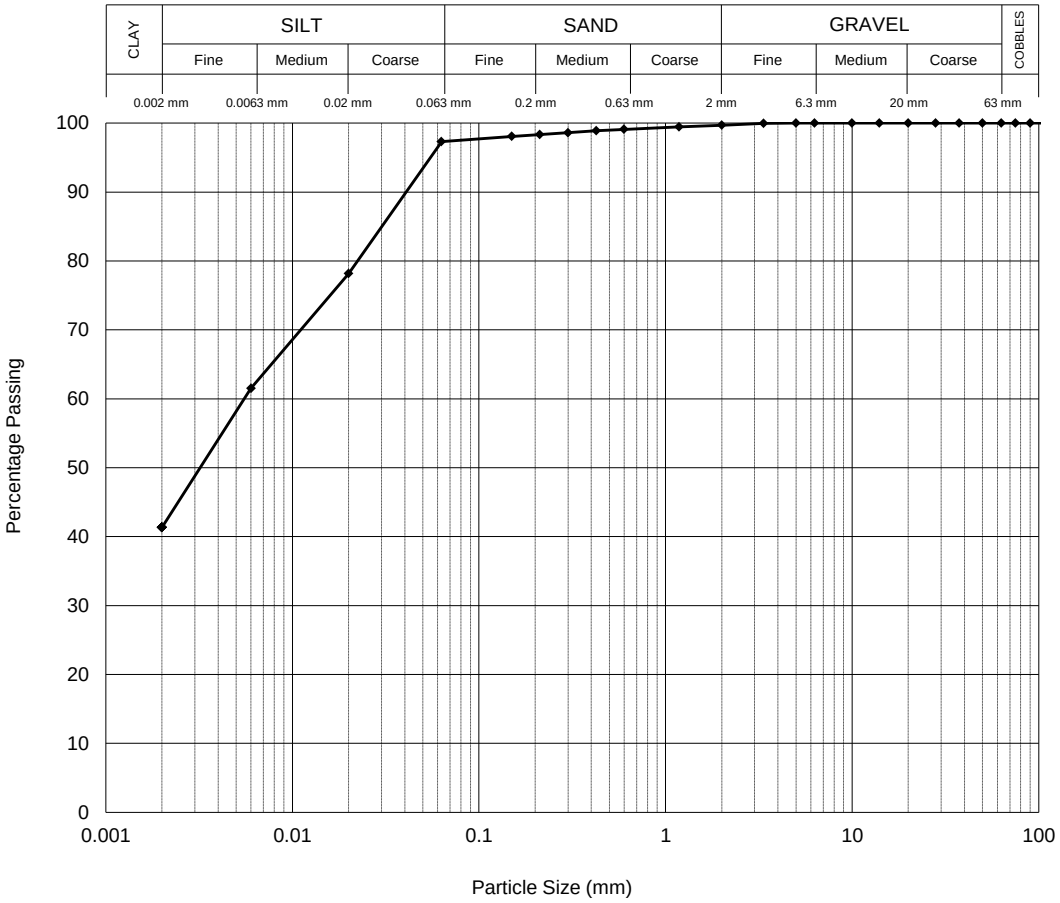
BH / TP No.	GT4
Sample Ref	D1L7
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	78
6 µm	62
2 µm	41

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	56
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	Core
Sample Ref.:	C1L7
Sample Type:	C

Description:
Stiff dark grey CLAY withmuch weakly cemented mudstone gravel up to 8mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	97.91	97.27
Height	*mm*	100.09	99.43
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.03	2.13
Dry Density	*Mg/m³*	1.67	1.70

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.51	0.98

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	14.8

PERMEABILITY STAGE

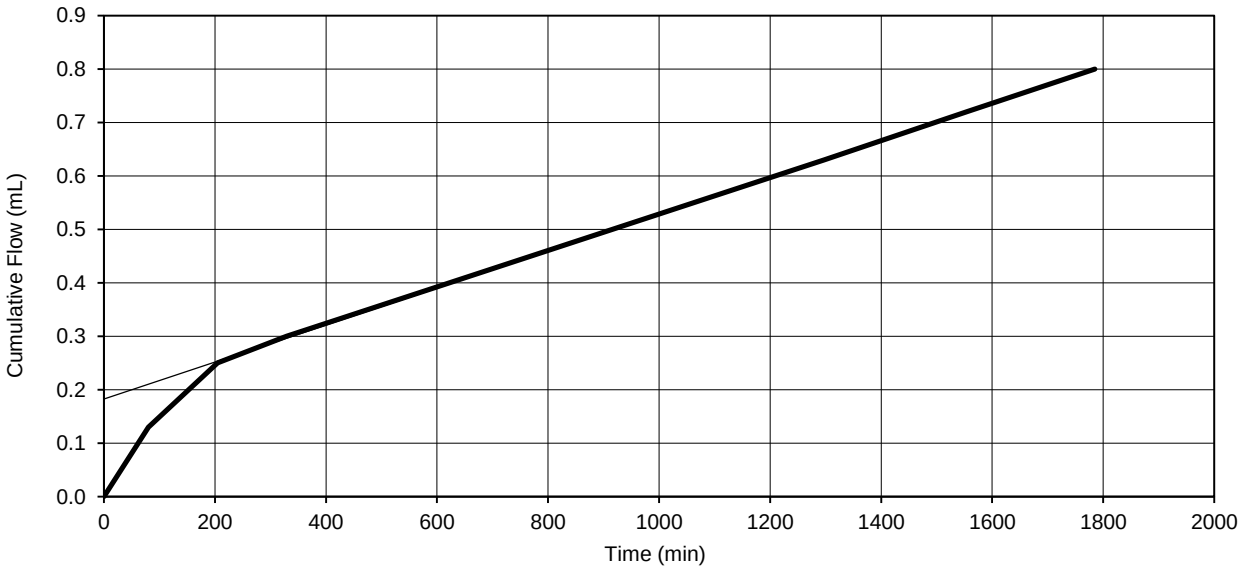
Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 7.6×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number:

GEO / 27983

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk / dry Mg/m3		*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m3	Remarks
	Ref	Top	Base	Type										
C2 L7	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			22.9	100	45	22	23		
D2 L7	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.3	100	45	22	23		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key			Date Printed	Approved By	Table
Density test	Liquid Limit	Particle density			1
Linear measurement unless :	4pt cone unless :	sp - small pyknometer	09/02/2018 00:00		
wd - water displacement	cas - Casagrande method	gj - gas jar			sheet
wi - immersion in water	1pt - single point test				1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		C2L7	B	Dark grey CLAY and SILT.	2.71	2
GT4		D2L7	B	Dark grey very clayey SILT.	2.69	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

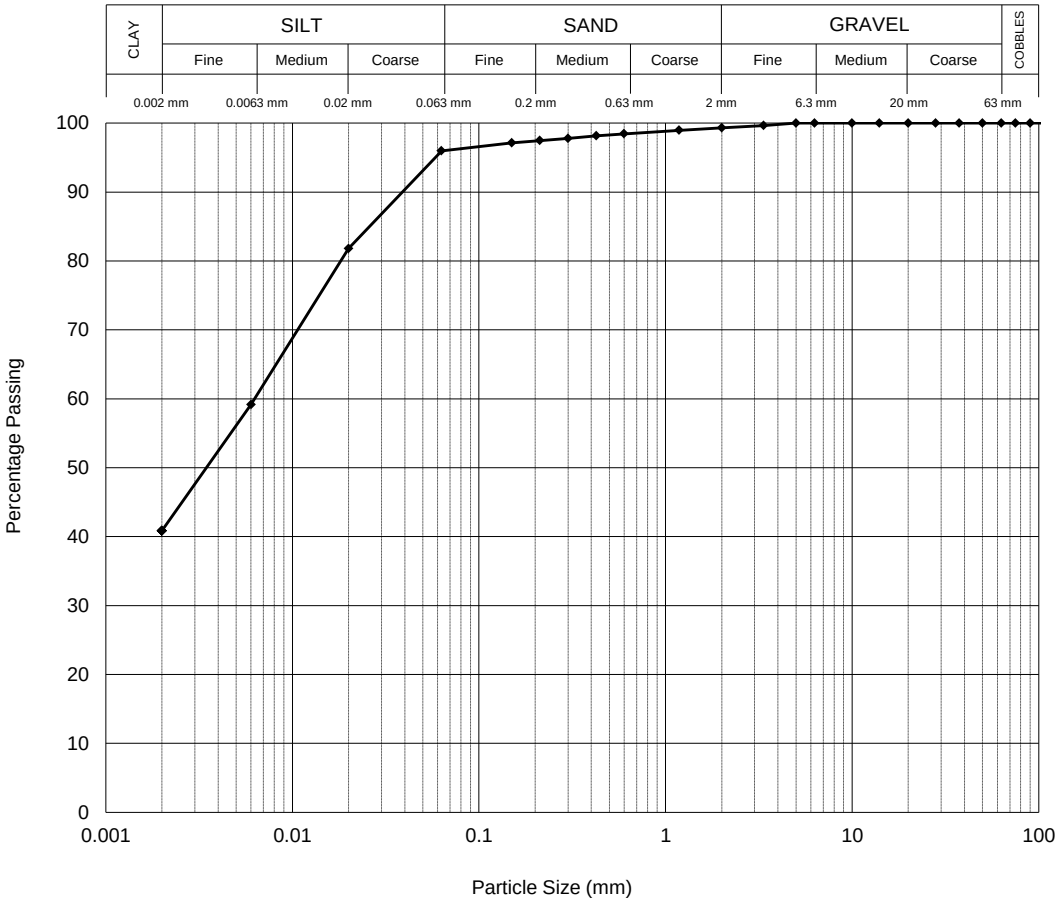
BH / TP No.	GT2
Sample Ref	C2L7
Sample Type	B

Description

Dark grey CLAY and SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	82
6 µm	59
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

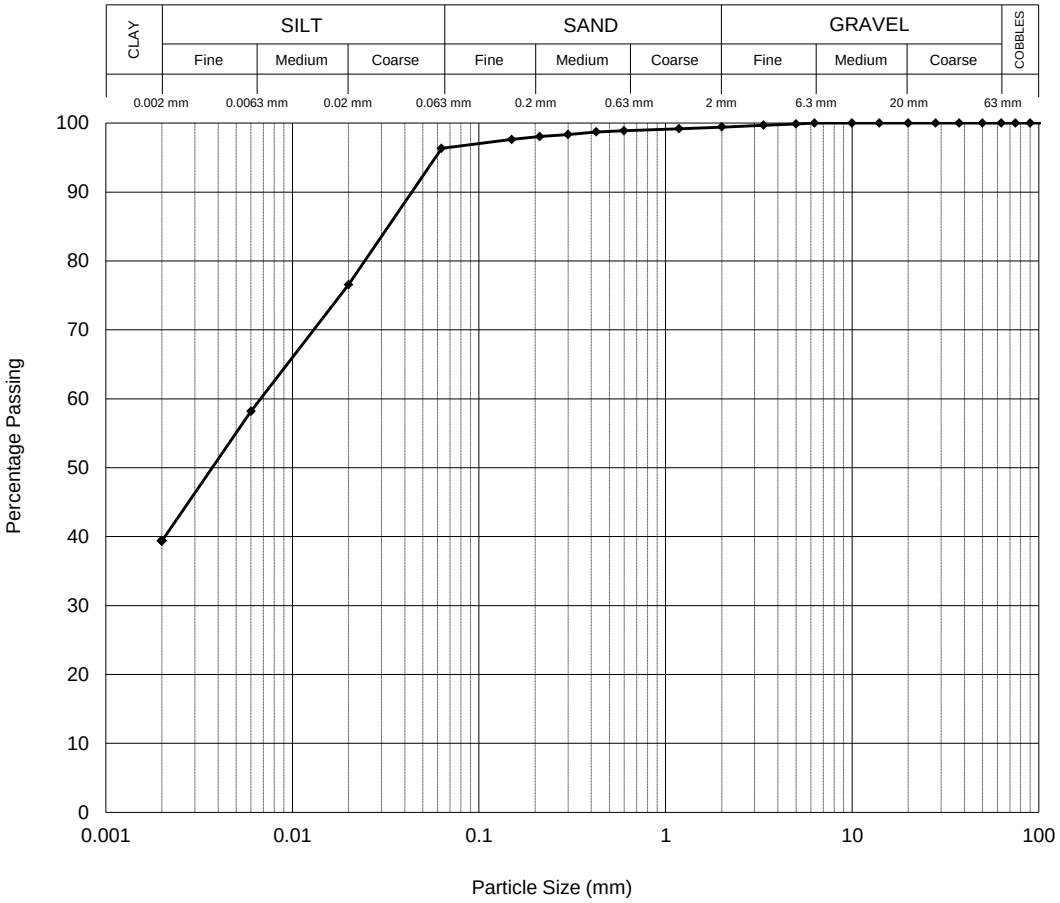
BH / TP No.	GT4
Sample Ref	D2L7
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	77
6 µm	58
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	3
Silt	57
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	Core
Sample Ref.:	C2L7
Sample Type:	C

Description:
Stiff dark grey CLAY

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation — Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	99.49	99.32
Height	*mm*	99.44	99.27
Moisture Content	*%*	22	25
Bulk Density	*Mg/m³*	2.08	2.14
Dry Density	*Mg/m³*	1.70	1.71

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.51	0.97

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	3.8

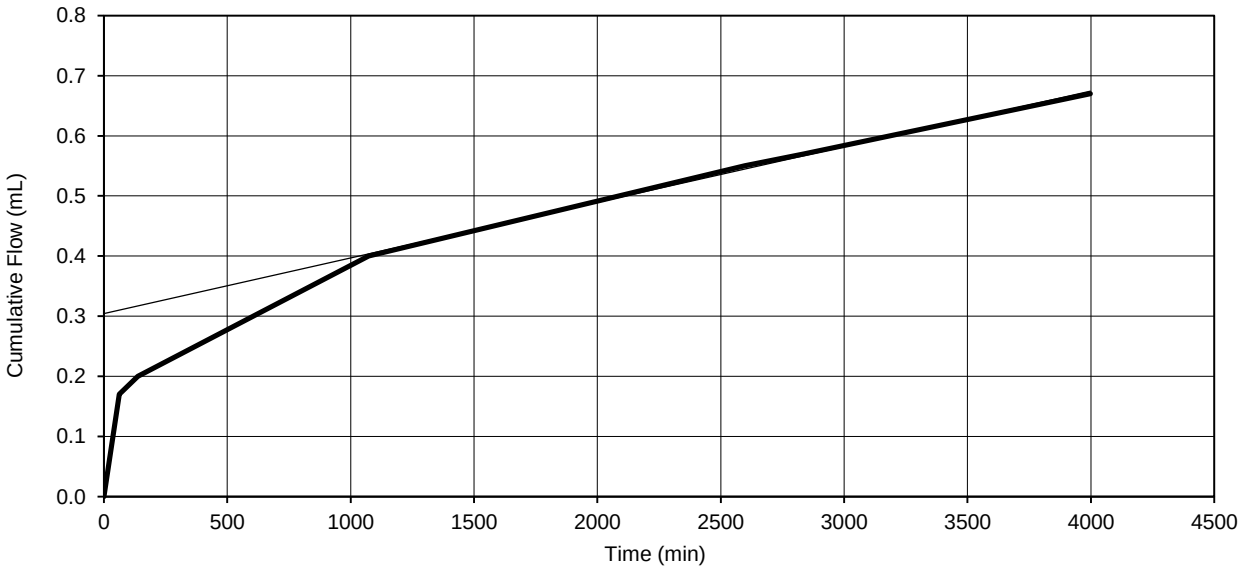
PERMEABILITY STAGE — Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.3
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	4
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 1.9×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number:

GEO / 27982

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
C3 L4	GT1	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			16.3	100	48	22	26		
D4 L2	GT3	0.00		B	Dark grey slightly gravelly slightly sandy CLAY			20.7	100	45	20	25		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed	Approved By	Table
15/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
C3L4		GT2	B	Dark grey silty CLAY.	2.70	2
D4L2		GT4	B	Dark grey silty CLAY	2.71	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

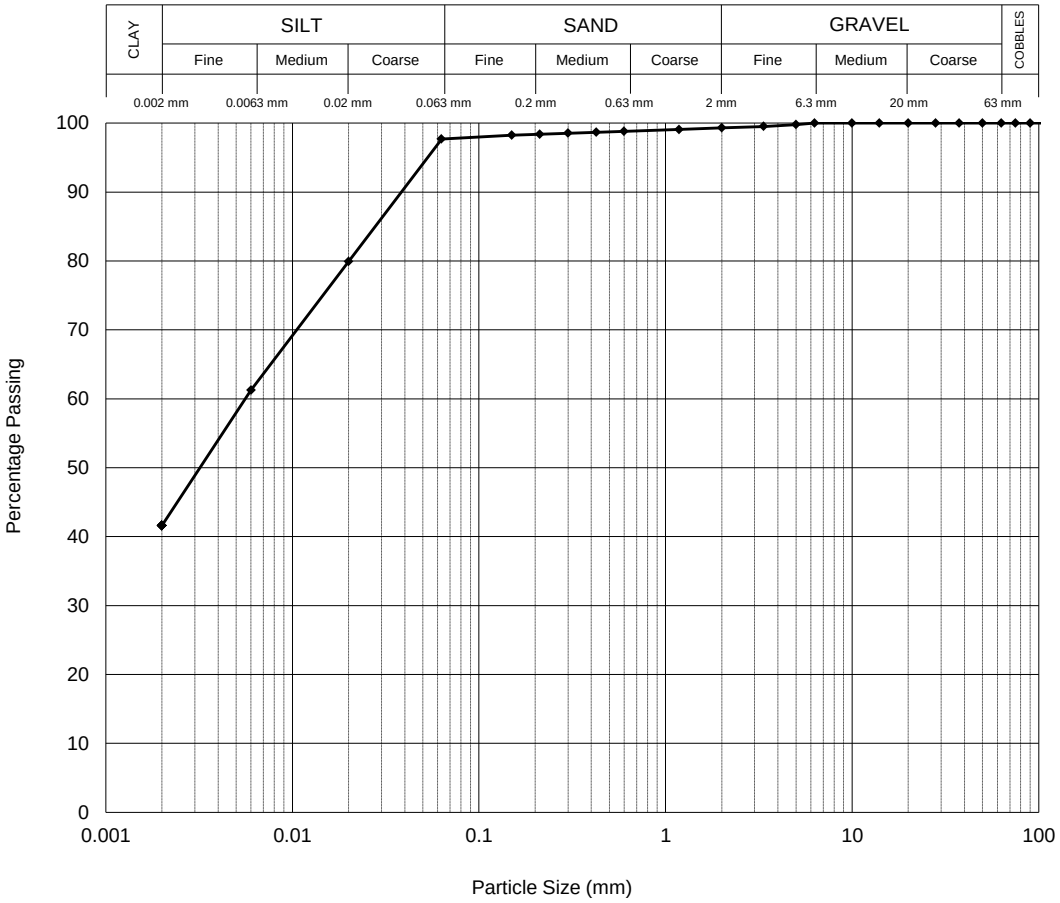
BH / TP No.	C3L4
Sample Ref	GT2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	80
6 µm	61
2 µm	42

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	2
Silt	56
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

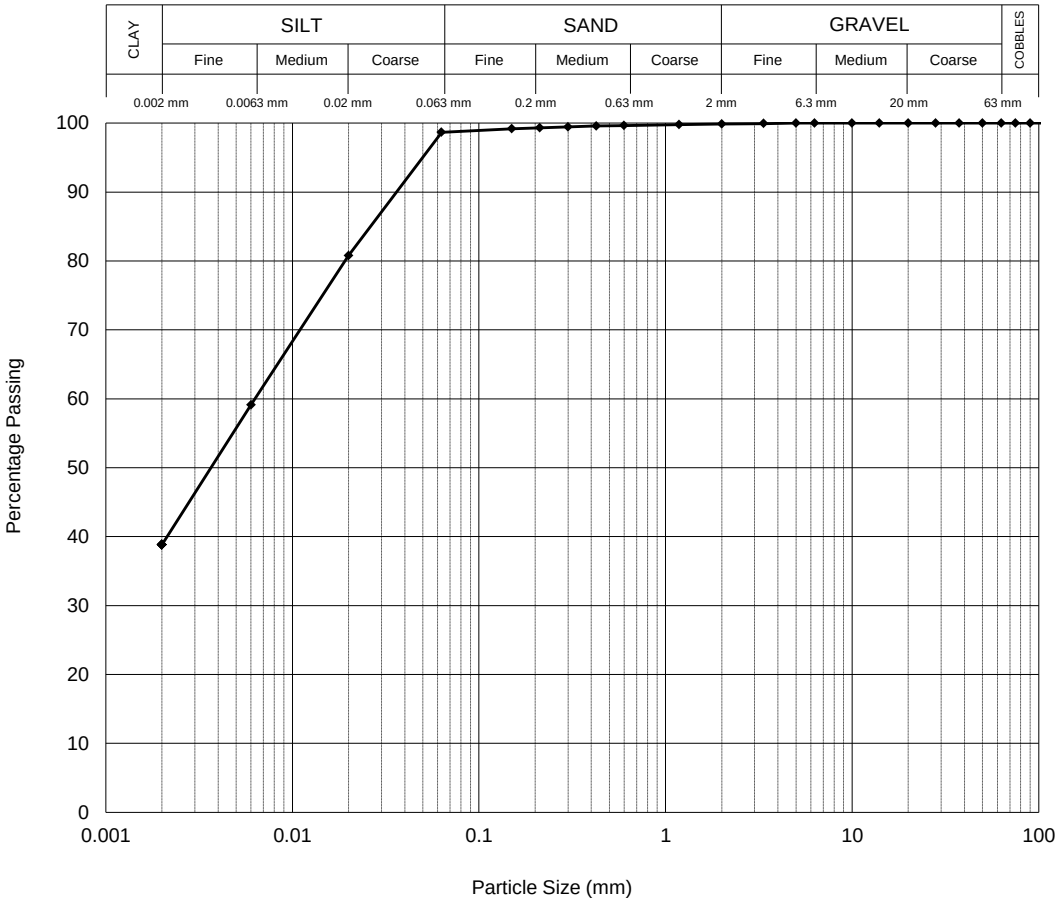
BH / TP No.	D4L2
Sample Ref	GT4
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	100
425 µm	100
300 µm	99
212 µm	99
150 µm	99
63 µm	99



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	81
6 µm	59
2 µm	39
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	1
Silt	60
Clay	39

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	C3-L4
Sample Type:	C

Description:
Soft dark grey CLAY with rare fine to medium gravel and occasional weakly cemented mudstone up to 10mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	n/a
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	100.34	99.85
Height	*mm*	100.32	99.83
Moisture Content	*%*	20	24
Bulk Density	*Mg/m³*	1.97	2.08
Dry Density	*Mg/m³*	1.65	1.67

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.18	0.95

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	11.6

PERMEABILITY STAGE

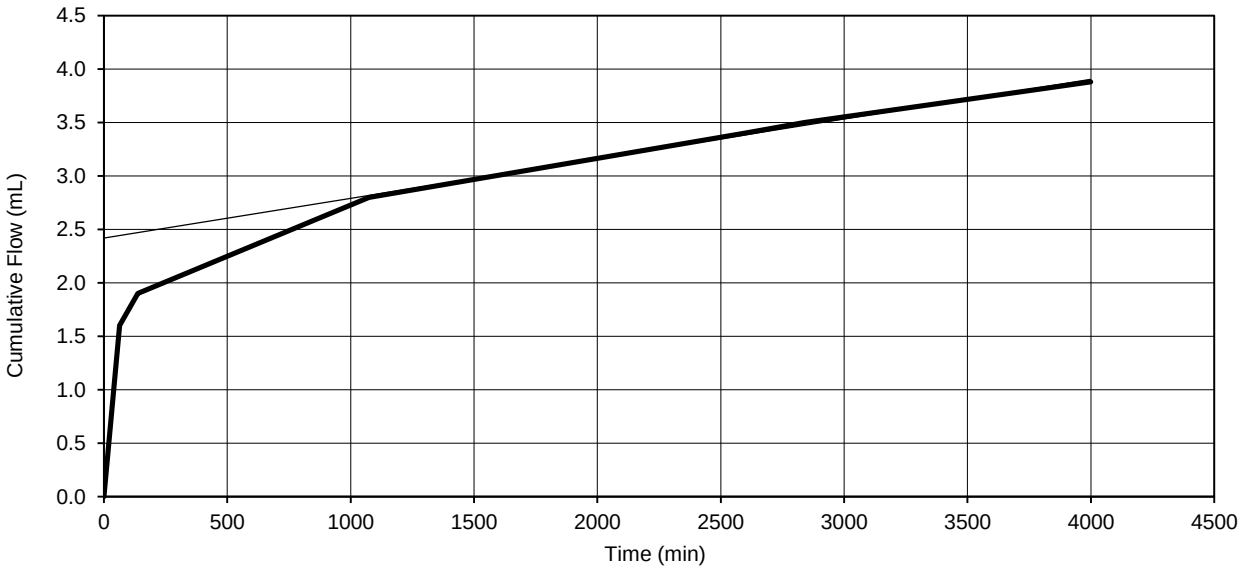
Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	3
Consolidation	*days*	2
Flow	*days*	3

Coefficient of Permeability
k_v at 20 °C = 7.8×10^{-11} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number:

GEO / 28028

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density		*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		bulk	dry							
						Mg/m3		%	%	%	%	%	Mg/m3	
D2 L8	GT1	0.00		B	Dark grey slightly sandy CLAY			21.4	100	51	22	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
26/09/2018	Lisa Maiden	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Sample Type	Description	Particle Density Mg/m³	Test Method
D2L8		GT2	B	Dark grey very clayey SILT.	2.63	2

Notes

Test Method

1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

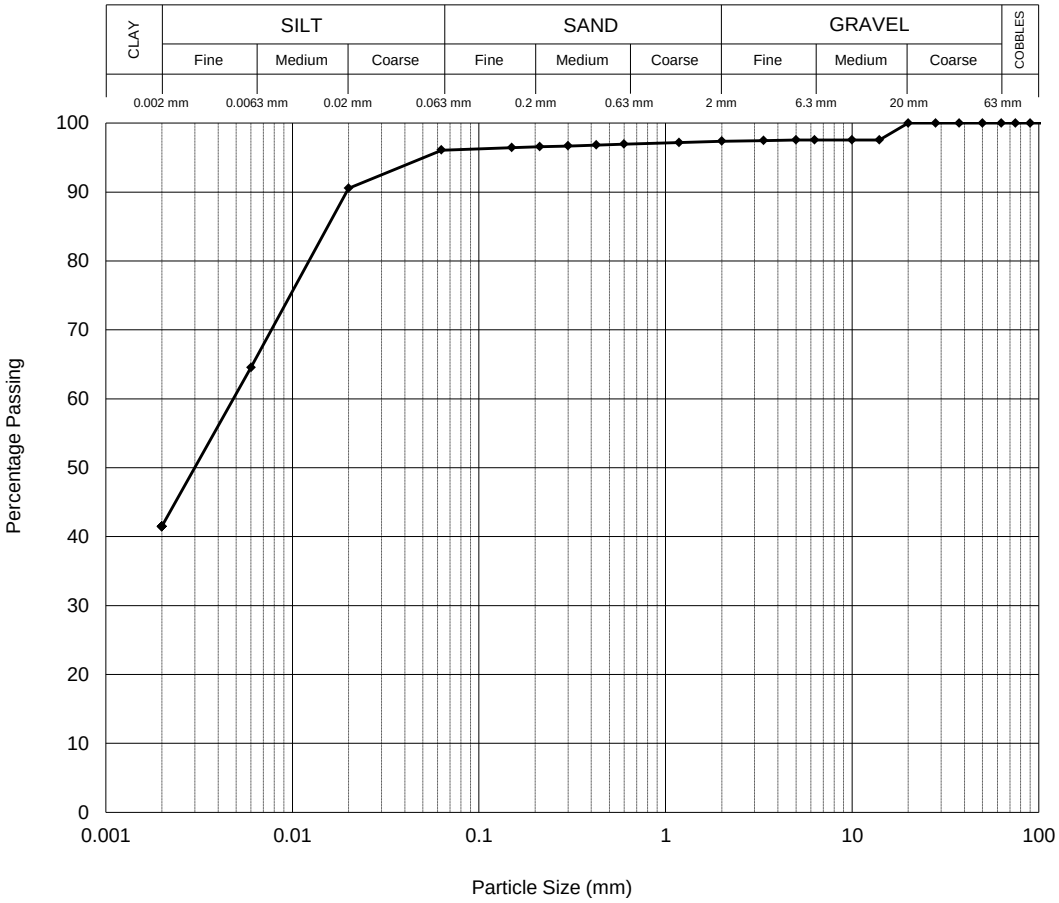
BH / TP No.	D2L8
Sample Ref	GT2
Sample Type	B

Description

Dark grey very clayey SILT.

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	98
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	97
2.00 mm	97
1.18 mm	97
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	96
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	91
6 µm	65
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	3
Sand	1
Silt	55
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
11/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS1377 : Part 6 : Clause 6 :1990

Determination of Permeability in a Triaxial Cell

Borehole Ref.:	D2L8
Sample Type:	C

Description:
Stiff dark grey CLAY with rare fine to coarse gravel. Occasional weakly cemented mudstone up to 2mm across.

SPECIMEN DETAILS

Depth within original sample	n/a
Orientation within original	Vertical
Specimen preparation	Undisturbed

TEST DETAILS

Cell Preparation: Performed in accordance with Clause 3.5

		INITIAL	FINAL
Diameter	*mm*	100.03	99.65
Height	*mm*	100.17	99.79
Moisture Content	*%*	21	25
Bulk Density	*Mg/m³*	2.03	2.12
Dry Density	*Mg/m³*	1.67	1.69

SATURATION STAGE

Saturation initially by constant moisture content, followed by back-pressure assistance.

Pore pressure coefficient ('B' value)		0.53	0.96

CONSOLIDATION STAGE

Effective pressure	*kPa*	50
Volume change	*mL*	8.9

PERMEABILITY STAGE

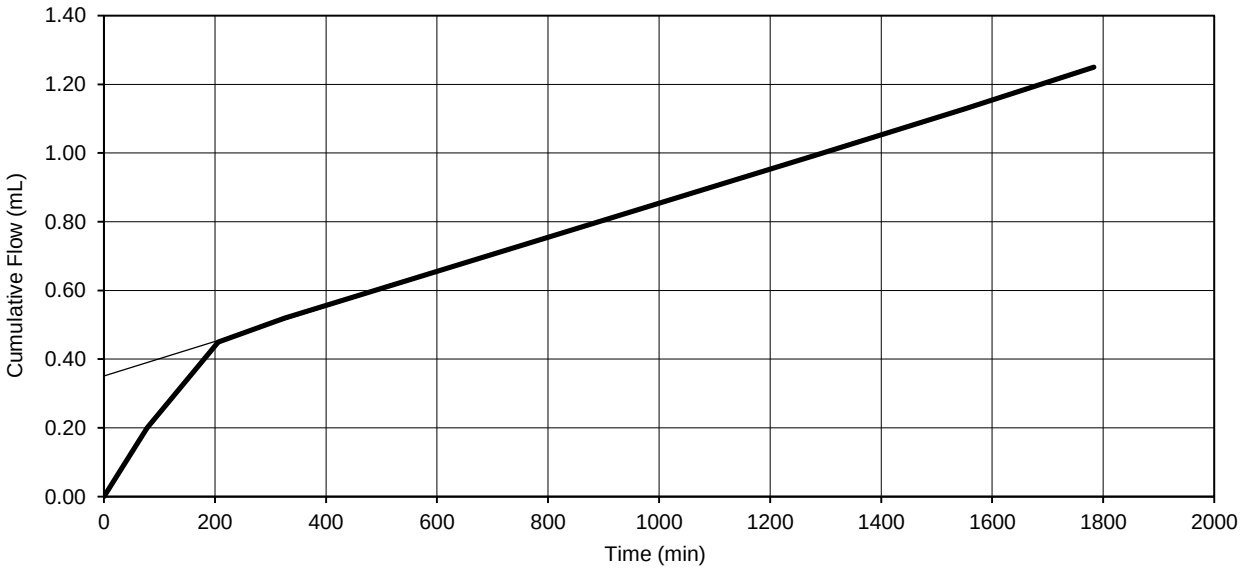
Measured under constant head conditions in a triaxial cell

Pressure difference across specimen	*kPa*	10
Hydraulic gradient		10.2
Mean effective stress	*kPa*	45

TEST DURATIONS

Saturation	*days*	5
Consolidation	*days*	2
Flow	*days*	2

Coefficient of Permeability
k_v at 20 °C = 1.1×10^{-10} m/s



Checked and Approved by

J A Reynolds - Laboratory Manager
12/10/2018

Project Number:

GEO / 28031

Project Name:

DOCKSWAY CELL 4
AG0390

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
B2 L1	GT1	0.00		B	Dark grey slightly sandy silty CLAY			19.3	100	48	21	27		
C2 L1	GT3	0.00		B	Dark grey slightly sandy silty CLAY			23.1	100	50	23	27		
D1 L1	GT6	0.00		B	Dark grey slightly sandy silty CLAY			25.5	100	44	23	21		
D2 L1	GT4	0.00		B	Dark grey slightly sandy silty CLAY			20.9	100	51	22	29		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

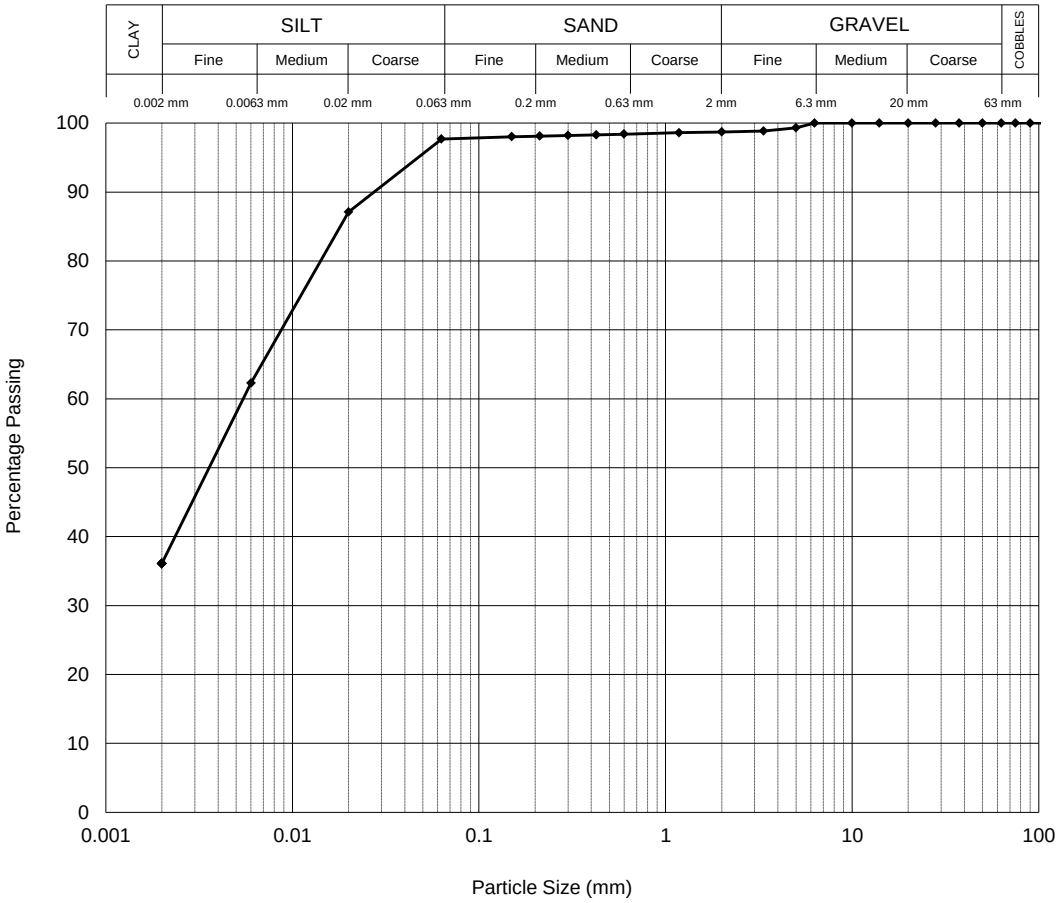
BH / TP No.	C2L1
Sample Ref	GT2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	62
2 µm	36

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	62
Clay	36

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27648

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

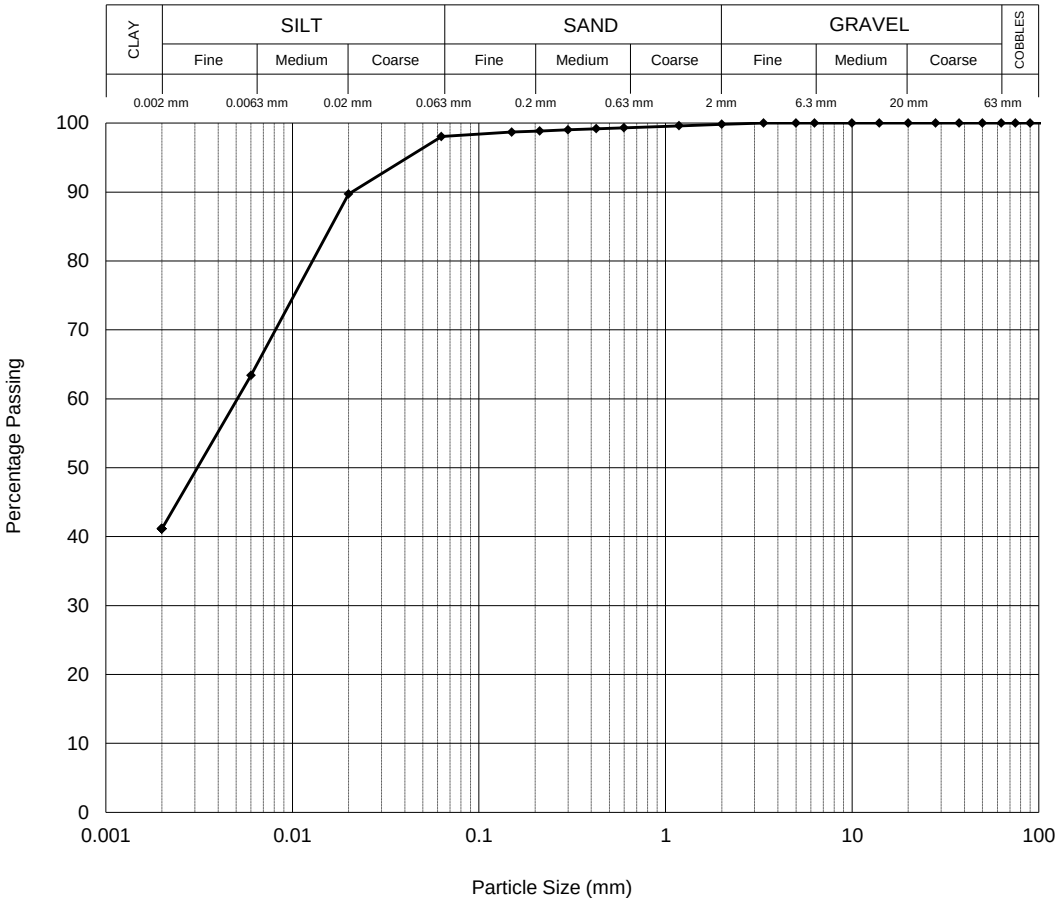
BH / TP No.	D2L1
Sample Ref	GT5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	100
1.18 mm	100
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	99
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	90
6 µm	63
2 µm	41
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	0
Sand	2
Silt	57
Clay	41

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27648

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk	Density dry	*w*	Passing 425µm	LL	PL	PI	Particle density	Remarks
	Ref	Top	Base	Type		Mg/m^3		%	%	%	%	%	Mg/m^3	
B2 L2	1	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	49	22	27		
C1 L1	2	0.00		B	Dark grey slightly sandy silty CLAY			22.0	100	48	22	26		
C4 L-1	1	0.00		B	Dark grey slightly sandy silty CLAY			20.3	100	48	21	27		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test — Linear measurement unless : wd - water displacement; wi - immersion in water

Liquid Limit — 4pt cone unless : cas - Casagrande method; 1pt - single point test

Particle density — sp - small pyknometer; gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
C1L1-B1-GT5		GT5			B	Dark grey silty CLAY	2.72	2
C4I-1-B2-GT14		GT14			B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

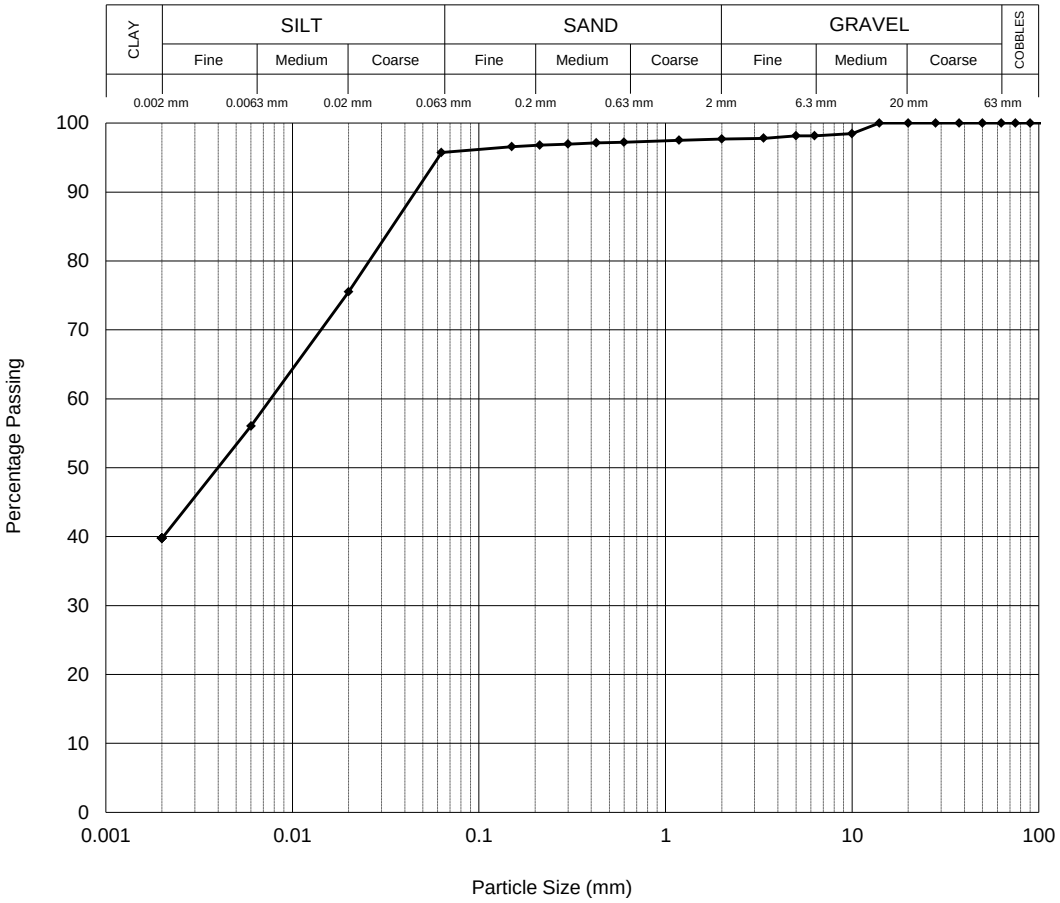
BH / TP No.	C1L1-B1-GT5
Sample Ref	GT5
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	98
1.18 mm	98
600 µm	97
425 µm	97
300 µm	97
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	76
6 µm	56
2 µm	40

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	2
Sand	2
Silt	56
Clay	40

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

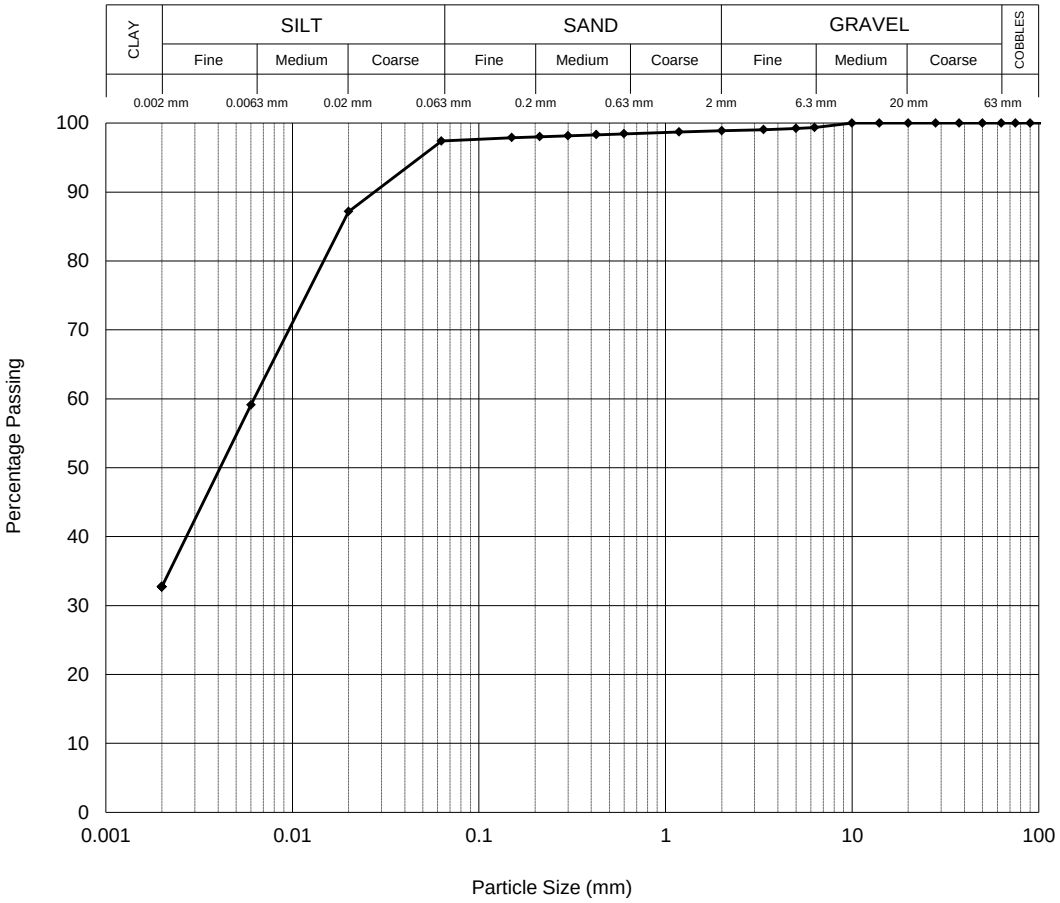
BH / TP No.	C4I-1-B2-GT14
Sample Ref	GT14
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	99
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	98
425 µm	98
300 µm	98
212 µm	98
150 µm	98
63 µm	97



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	87
6 µm	59
2 µm	33

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	65
Clay	33

Checked and Approved by

S Burke

S Burke - Senior Technician
06/07/2018

Project Number:

GEO / 27649

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

Test Report By GEOLABS Limited Bucknalls Lane, Garston, Watford, Hertfordshire, WD25 9XX

Client : C J Associates Geotechnical Limited, Kings Road Avenue, Bristol, Avon, BS11 9HF

(Ref 1530879043)

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample Ref	Top	Base	Type	Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
B2 L3	4	0.00		B	Dark grey slightly sandy silty CLAY			20.0	100	47	21	26		
C1 L2	3	0.00		B	Dark grey slightly sandy silty CLAY			21.2	100	47	22	25		
C4 L-2	1	0.00		B	Dark grey slightly sandy silty CLAY			19.2	100	47	21	26		
D1 L2	2	0.00		B	Dark grey slightly sandy silty CLAY			23.2	100	48	22	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed	Approved By	Table
18/07/2018	L Logan	1
		sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		C1-L2			B	Dark grey silty CLAY	2.73	2
GT5		B2-L3			B	Dark grey silty CLAY	2.70	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

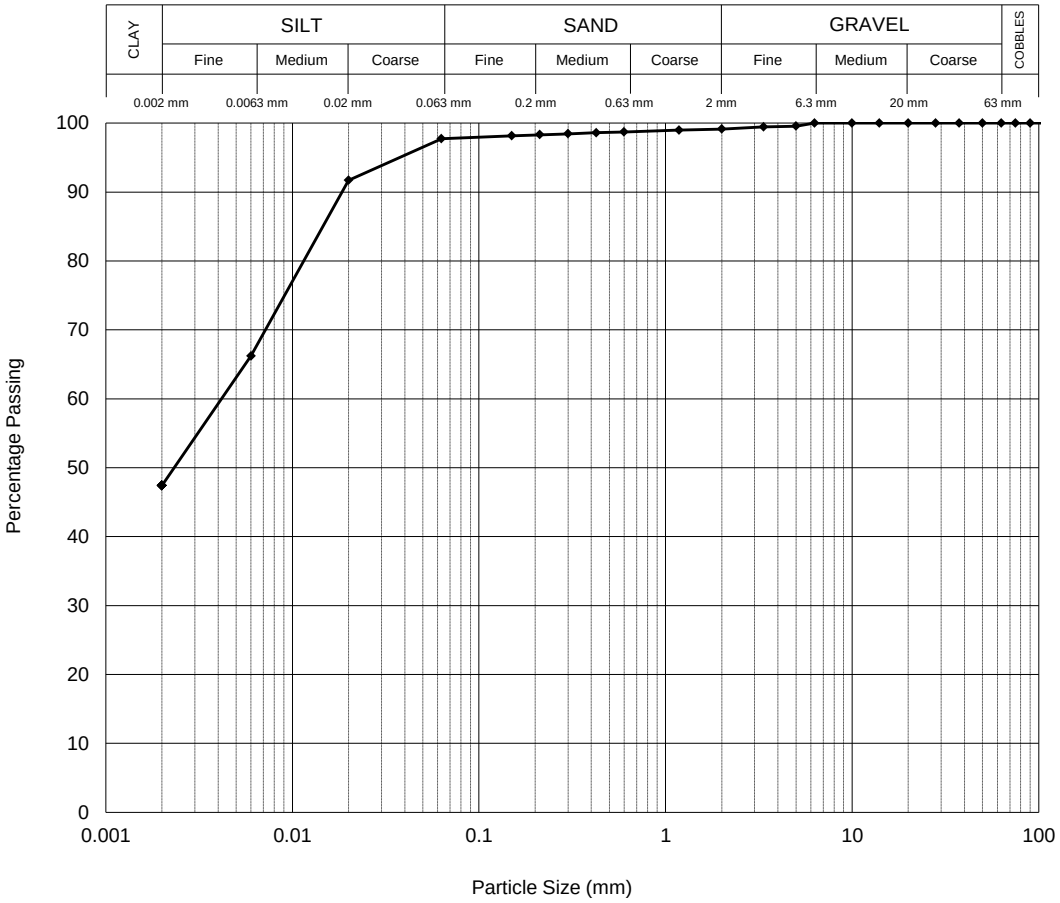
BH / TP No.	GT3
Sample Ref	C1-L2
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	98
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	92
6 µm	66
2 µm	47
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	50
Clay	48

Checked and Approved by

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

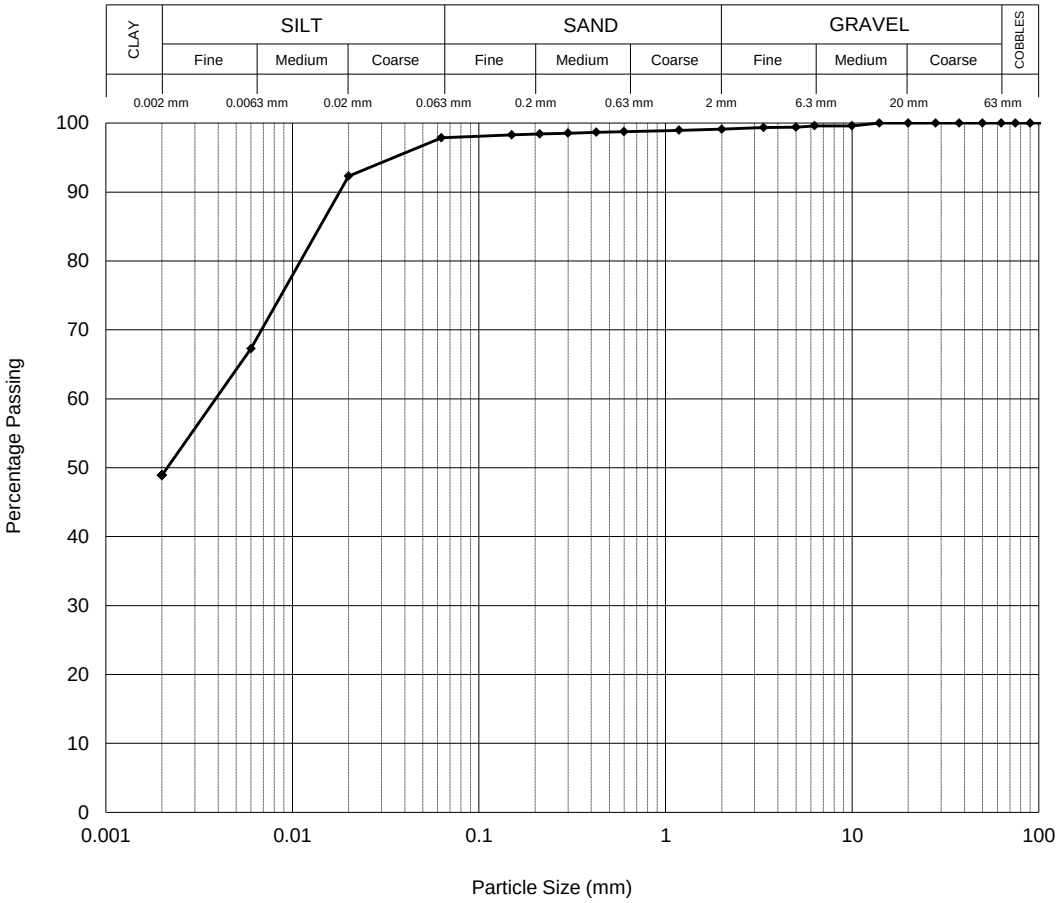
BH / TP No.	GT5
Sample Ref	B2-L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	99
3.35 mm	99
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	98
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	92
6 µm	67
2 µm	49
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	49
Clay	49

Checked and Approved by

S Burke

S Burke - Senior Technician
19/07/2018

Project Number:

GEO / 27698

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

cjassociates

Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
C2 L3	1	0.00		B	Dark grey slightly sandy silty CLAY			21.4	100	46	22	24		
D1 L3	4	0.00		B	Dark grey slightly sandy silty CLAY			21.3	100	47	22	25		
D2 L3	3	0.00		B	Dark grey slightly sandy silty CLAY			21.0	100	43	22	21		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test
Linear measurement unless :
wd - water displacement
wi - immersion in water

Liquid Limit
4pt cone unless :
cas - Casagrande method
1pt - single point test

Particle density
sp - small pyknometer
gj - gas jar

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT2		C2-L3			B	Dark grey silty CLAY	2.71	2
GT5		D1-L3			B	Dark grey silty CLAY	2.72	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27699

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

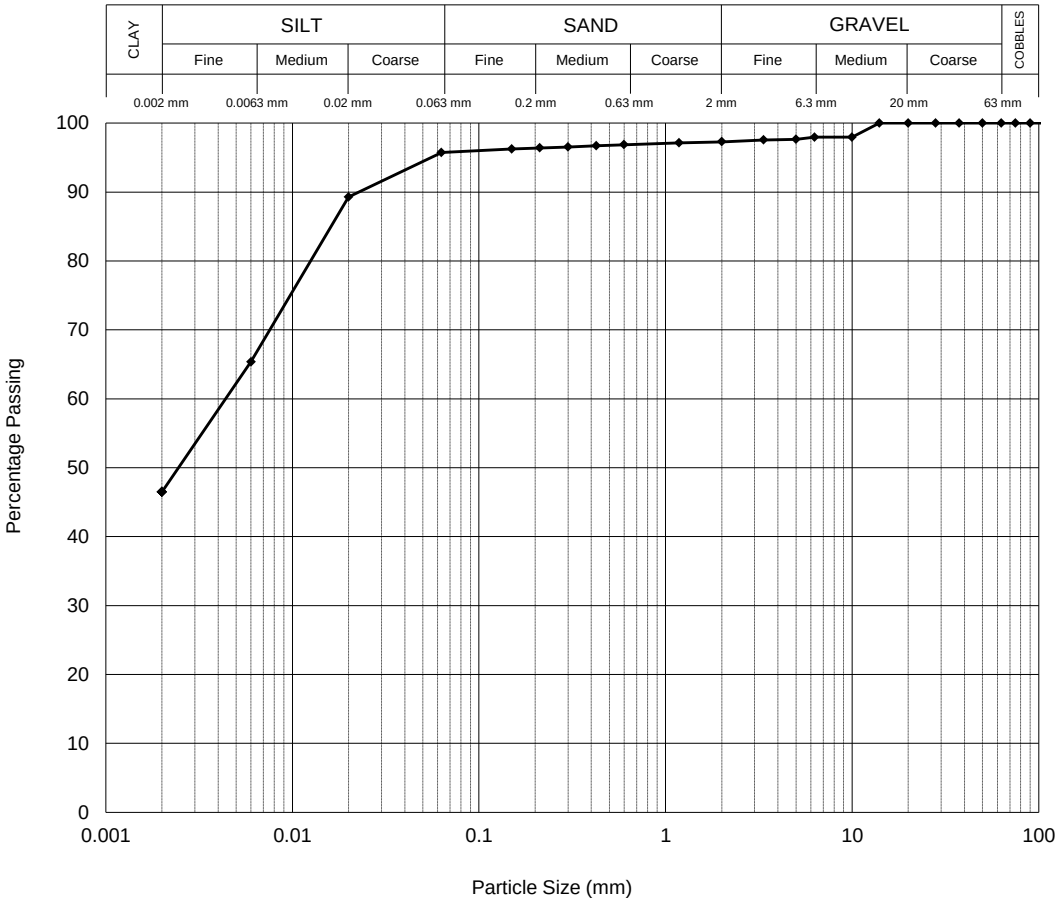
BH / TP No.	GT2
Sample Ref	C2-L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	97
1.18 mm	97
600 µm	97
425 µm	97
300 µm	97
212 µm	96
150 µm	96
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	89
6 µm	65
2 µm	46

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	3
Sand	2
Silt	49
Clay	46

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27699

Project Name:

DOCKSWAY CELL 4
AG0390

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BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

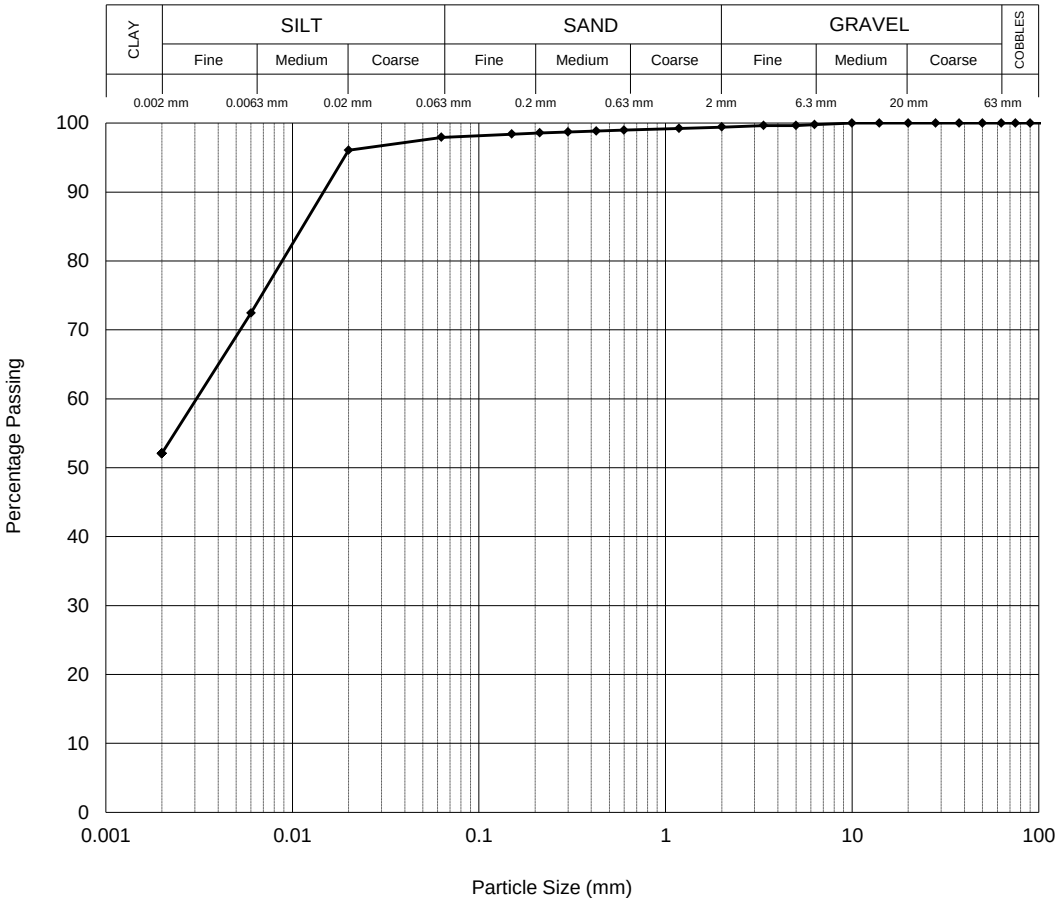
BH / TP No.	GT5
Sample Ref	D1-L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	100
6.30 mm	100
5.00 mm	100
3.35 mm	100
2.00 mm	99
1.18 mm	99
600 µm	99
425 µm	99
300 µm	99
212 µm	99
150 µm	98
63 µm	98



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	96
6 µm	72
2 µm	52

Particle Density 2.70(A) Mg/m³

Particle Proportions	
Cobbles	0
Gravel	1
Sand	1
Silt	46
Clay	52

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27699

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

UKAS TESTING 1982

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Summary of Classification Test Results

Project No.	Project Name
AG0390	Docksway Cell 4

Hole No.	Sample				Soil Description	Density bulk Mg/m^3	Density dry Mg/m^3	*w* %	Passing 425µm %	LL %	PL %	PI %	Particle density Mg/m^3	Remarks
	Ref	Top	Base	Type										
B2 L4	2	0.00		B	Dark grey slightly sandy silty CLAY			20.8	100	45	20	25		
C1 L3	1	0.00		B	Dark grey slightly sandy silty CLAY			18.9	100	48	21	27		
C4 L-3	4	0.00		B	Dark grey slightly sandy silty CLAY			20.5	100	45	19	26		

All tests performed in accordance with BS1377:1990 unless specified otherwise
Water Content Performed in accordance with BS EN ISO 17892-1 : 2014

Key

Density test	Liquid Limit	Particle density
Linear measurement unless :	4pt cone unless :	sp - small pyknometer
wd - water displacement	cas - Casagrande method	gj - gas jar
wi - immersion in water	1pt - single point test	

Date Printed: 18/07/2018

Approved By: L Logan

Table 1

sheet 1

BS1377: Part 2:1990 / BS EN ISO 17892-3 : 2015

PARTICLE DENSITY

Borehole / Trial Pit	Depth (m)	Sample Ref	Spec. Ref	Spec. Depth (m)	Sample Type	Description	Particle Density Mg/m³	Test Method
GT3		B2-L4			B	Dark grey silty CLAY with rare fine to medium gravel	2.71	2
GT5		C4-L3			B	Dark grey silty CLAY	2.72	2

Notes

Test Method
1. Gas jar : BS1377 : Part 2 : 1990 Clause 8.2
2. Pycnometer : BS EN ISO 17892-3:2015 (UKAS Accredited)

Checked and Approved by:

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27700

Project Name:

DOCKSWAY CELL 4
AG0390

GEOLABS

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

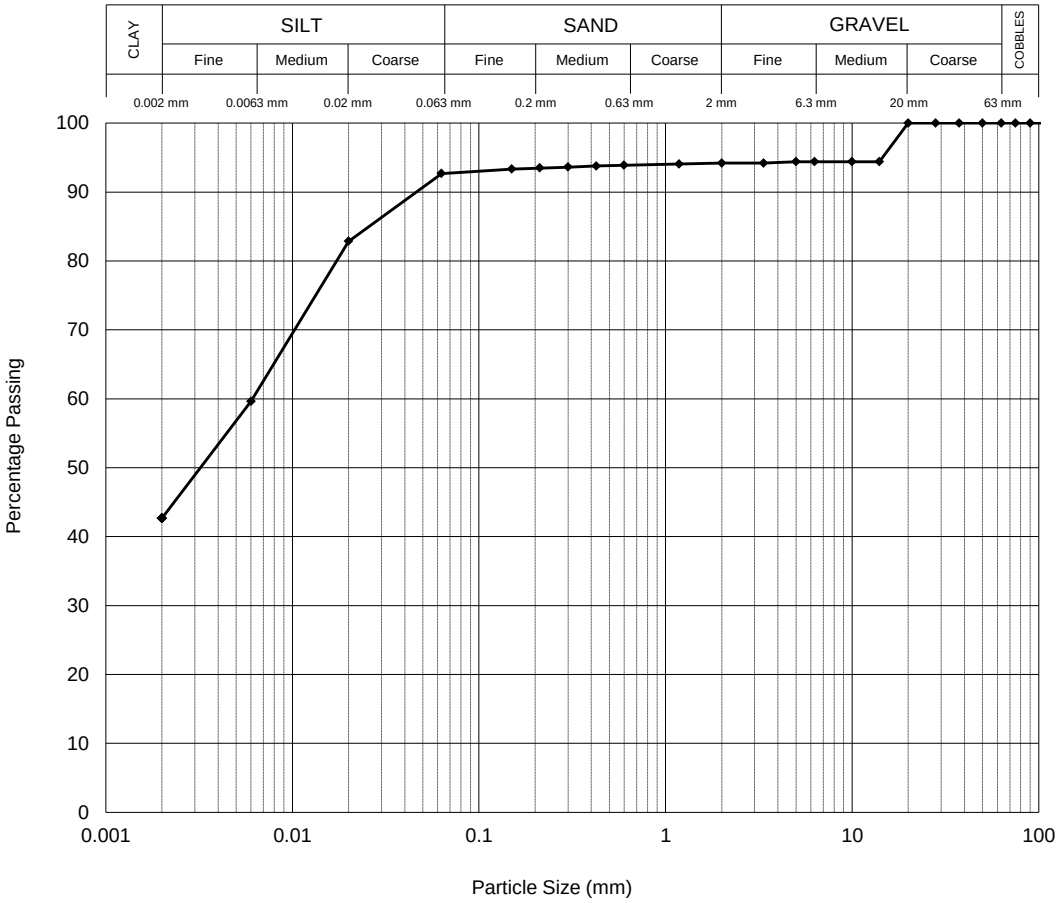
BH / TP No.	GT3
Sample Ref	B2-L4
Sample Type	B

Description

Dark grey silty CLAY with rare fine to medium gravel

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	94
10.0 mm	94
6.30 mm	94
5.00 mm	94
3.35 mm	94
2.00 mm	94
1.18 mm	94
600 µm	94
425 µm	94
300 µm	94
212 µm	93
150 µm	93
63 µm	93



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	83
6 µm	60
2 µm	43
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	6
Sand	2
Silt	50
Clay	42

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27700

Project Name:

DOCKSWAY CELL 4
AG0390

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UKAS TESTING 1982

BS EN ISO 17892-4 : 2016

PARTICLE SIZE DISTRIBUTION

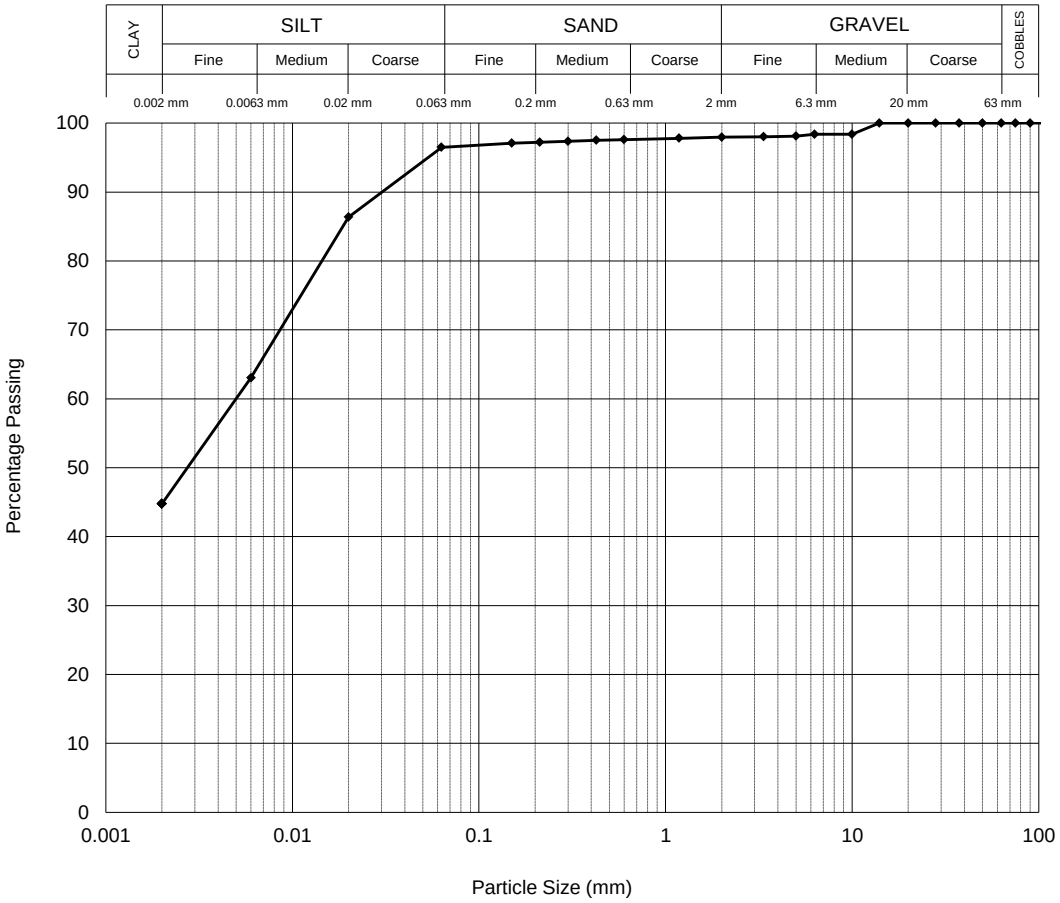
BH / TP No.	GT5
Sample Ref	C4-L3
Sample Type	B

Description

Dark grey silty CLAY

BS EN ISO 17892-4 : 2016 : Clause 5.2 - Wet Sieve
BS EN ISO 17892-4 : 2016 : Clause 5.4 - Sedimentation by Pipette

Sieve	
Size	% Pass
200.0 mm	100
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	100
10.0 mm	98
6.30 mm	98
5.00 mm	98
3.35 mm	98
2.00 mm	98
1.18 mm	98
600 µm	98
425 µm	98
300 µm	97
212 µm	97
150 µm	97
63 µm	96



Sedimentation	
No Pre-treatment used	
Temp (°C)	25
Size	% Pass
20 µm	86
6 µm	63
2 µm	45
Particle Density 2.70(A) Mg/m³	

Particle Proportions	
Cobbles	0
Gravel	2
Sand	1
Silt	52
Clay	45

Checked and Approved by

S Burke

S Burke - Senior Technician
20/07/2018

Project Number:

GEO / 27700

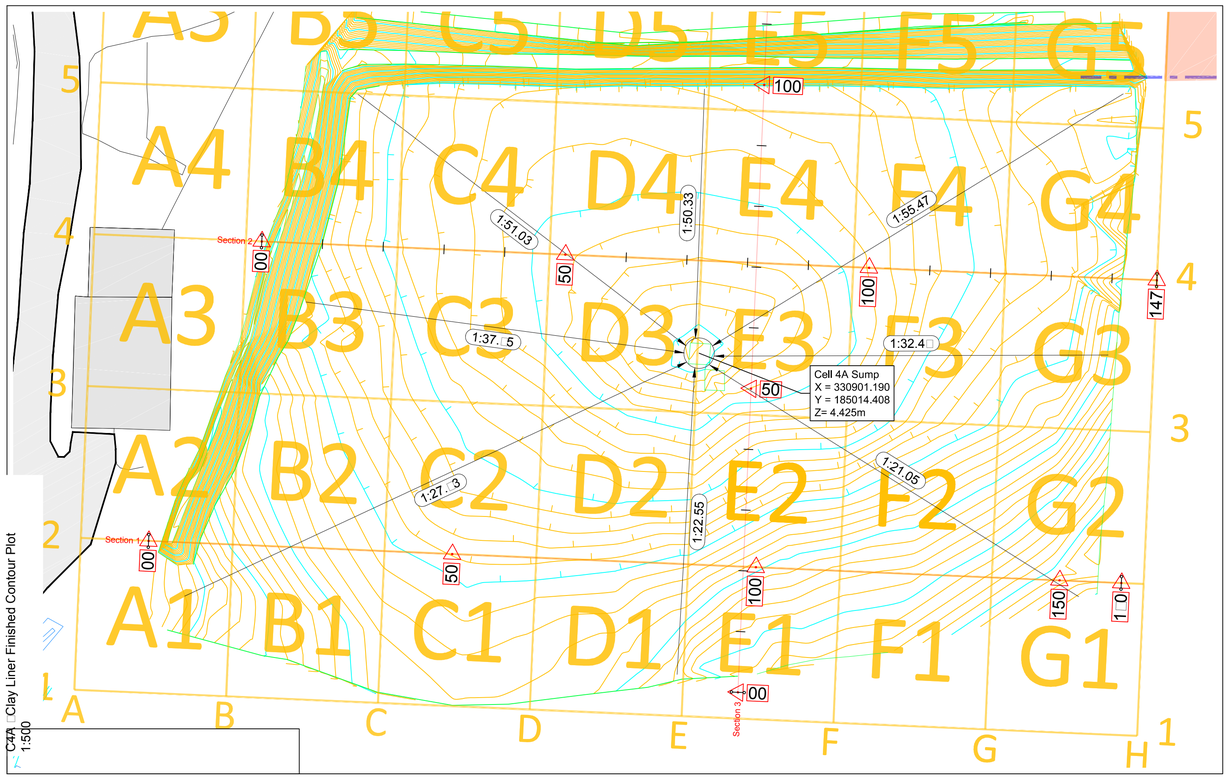
Project Name:

DOCKSWAY CELL 4
AG0390

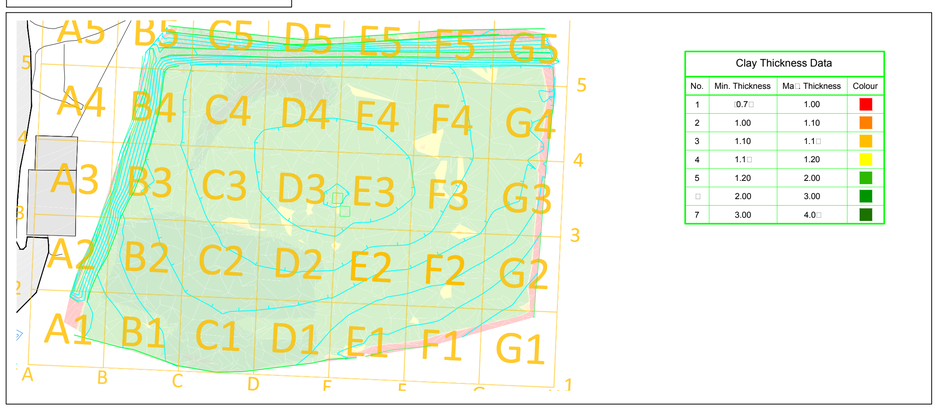
GEOLABS

UKAS TESTING 1982

Appendix 5 As Built Drawings



C4A Clay Liner Finished Contour Plot
1:500



Cell4A Iso
1:1000

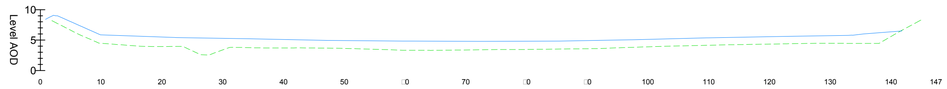
Clay Thickness Data			
No.	Min. Thickness	Ma□ Thickness	Colour
1	□0.7□	1.00	
2	1.00	1.10	
3	1.10	1.1□	
4	1.1□	1.20	
5	1.20	2.00	
□	2.00	3.00	
7	3.00	4.0□	

SECTION 1
Scale: H 1:500□V 1:500. Datum: 0.000



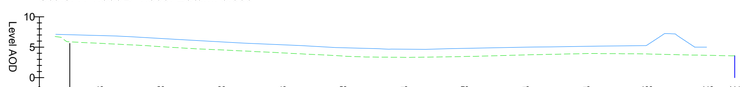
E□isting Levels	5□.2□	4.1.4□	3.5□	3.37	3.5□	3.□2□	3.7□	3.3□	4.22	5.07	5.3.7□	5.537	5.72	□.0□	7.27	7.47	7.414	7.207	5.□2□	4.1.4□	3.5□	3.37	3.5□	3.□2□	3.7□
Finished Levels	5	4.272	3.5□	3.035	3.5□	3.□2□	3.5	3.3□	4.11	5.450	□□□	5.04	5.7	7.247	7.207	7.47	7.233	5	4.272	3.5□	3.035	3.5□	3.□2□	3.5	3.3□
Level Difference	1.544	2.500	2.74	2.5	2.312	5.01	2.174	5□□□	2.21	5	2.331	5.□7□	1.2□	1.374	2.1□	1.2.7	1.247	1.207	1.233	2.500	2.74	2.5	2.312	5.01	2.174

SECTION 2
Scale: H 1:500□V 1:500. Datum: 0.000



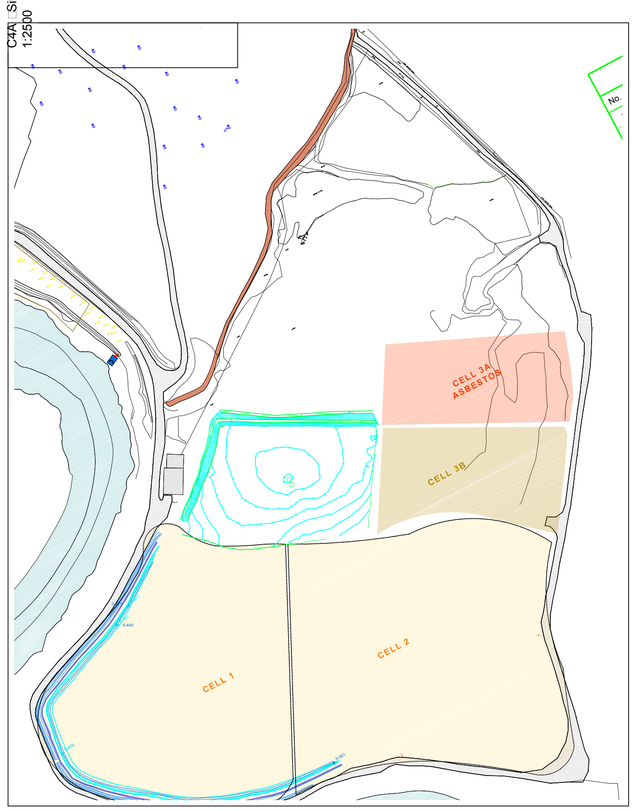
E□isting Levels	5.4□	3.4□	3.3□	3.704	3.23	3.322	3.375	3.4.1	3.5.0	3□.1	4.14	4.341	4.472	5.1□	5.4□	3.4□	3.3□	3.704	3.23	3.322	3.375	3.4.1	3.5.0	3□.1	4.14
Finished Levels	5.4	5.4□	5.2.7	5.0□	4.20	4.3□	4.00	4.10	4.0□	5.10	5.3□	5.552	5.71□	5.355	5.4	5.4□	5.2.7	5.0□	4.20	4.3□	4.00	4.10	4.0□	5.10	5.3□
Level Difference	1.3.0	1.552	1.01	1.3.2	1.2□	1.51	1.425	1.34	1.32	1.21	1.21	1.211	1.244	0.73	1.3.0	1.552	1.01	1.3.2	1.2□	1.51	1.425	1.34	1.32	1.21	1.21

SECTION 3
Scale: H 1:500□V 1:500. Datum: 0.000



E□isting Levels	5.30	5.0.7	4.544	4.0.0	3.537	3.324	3.4.1	3.730	3.45	3□.1	3.5.2														
Finished Levels	5.0□	5.422	5.5□	5.3.5	4.0□	4.73	4.00	4.3□	5.13	5.352	3.□.1														
Level Difference	1.27	1.334	1.315	1.335	1.3□	1.34	1.33	1.2.3	1.1.4	1.471	3□□□														

C4A Sitewide Contour Plot
1:2500



NOTES

A1

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Rev	Details	Dr	Ch	Ap	Date

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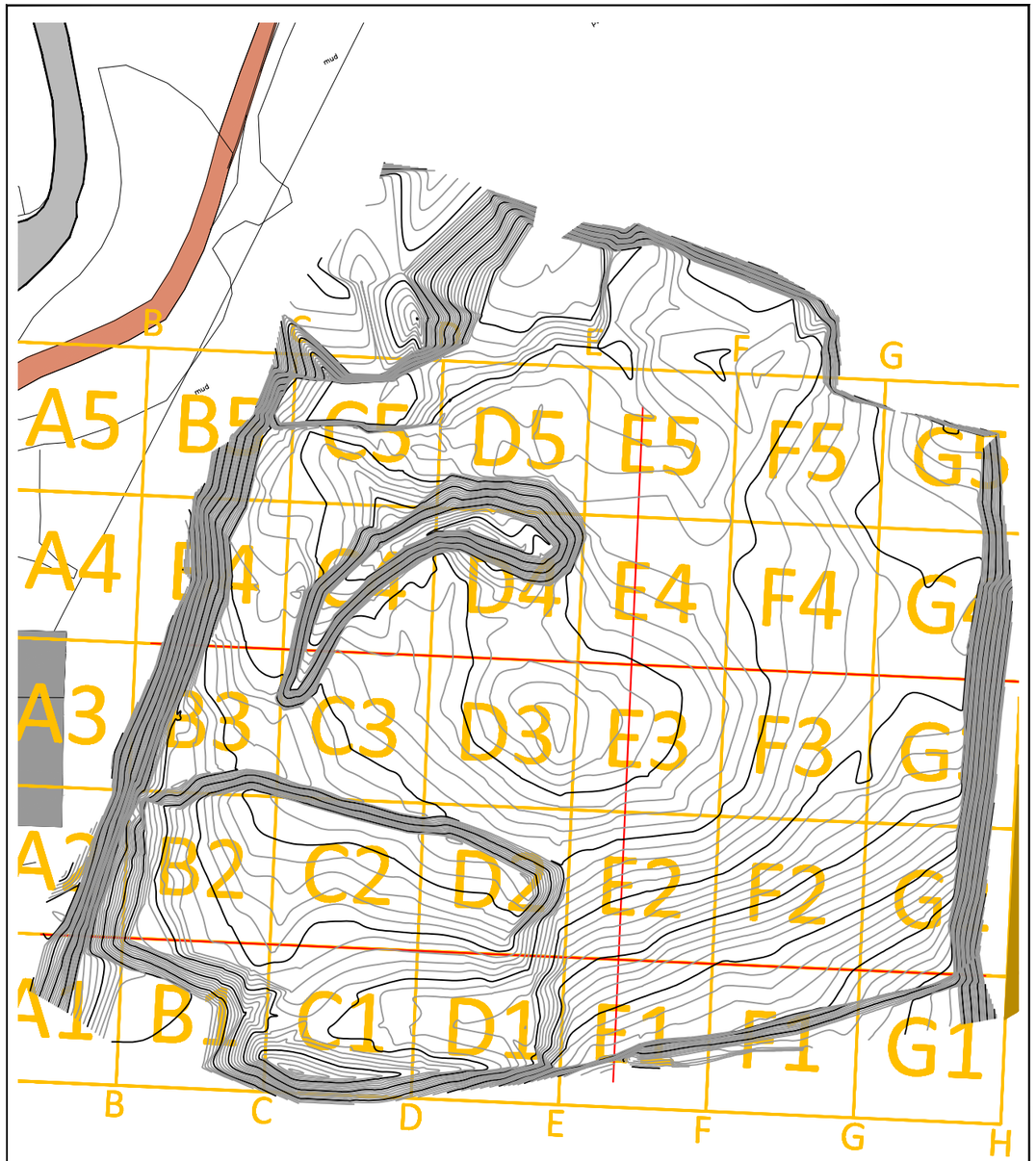
Project

Docksway Waste Disposal Site

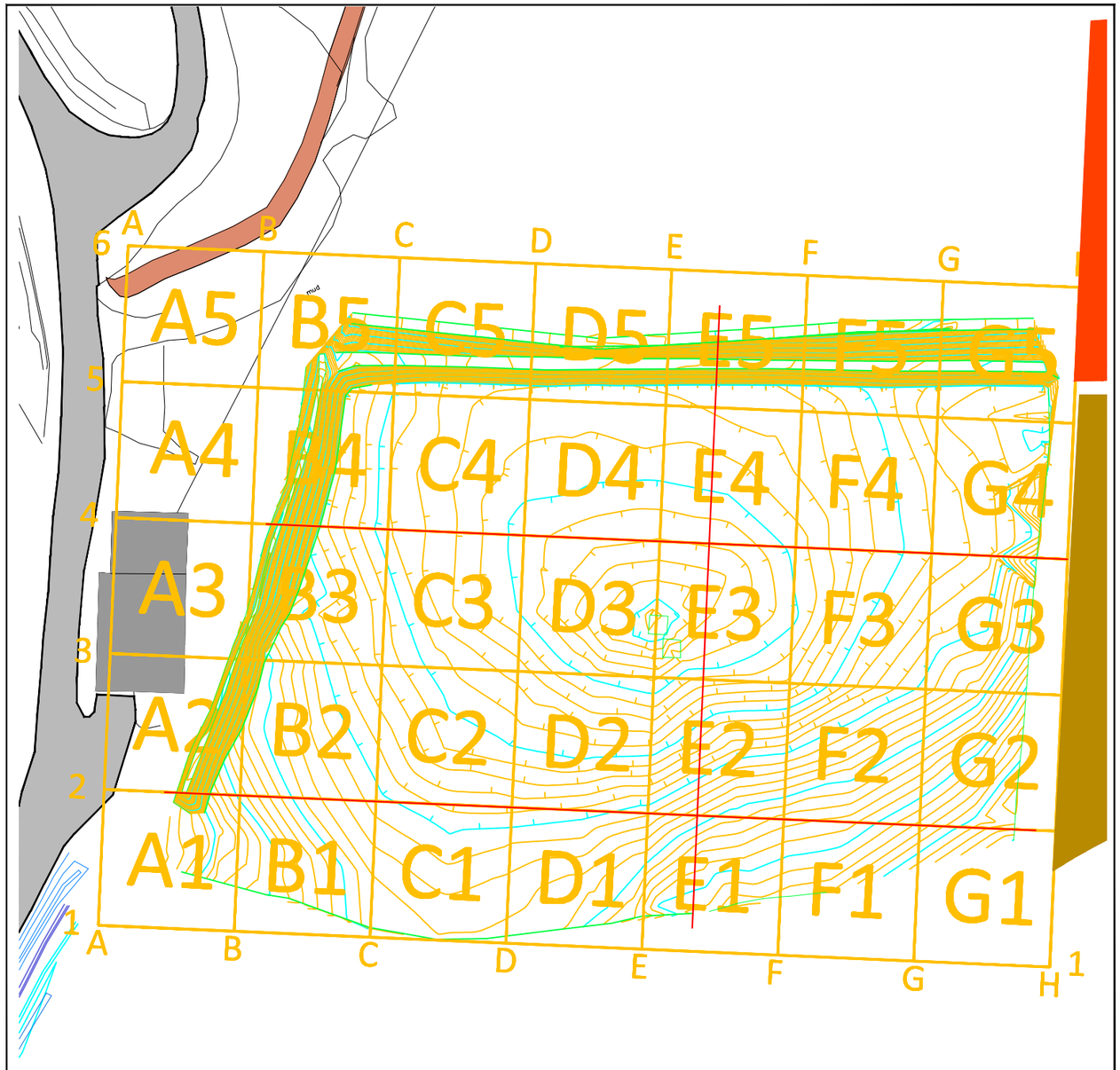
Cell 4A Clay Lining Works 2015

Asbestos Cell As Built Details

File No.	2514			Status:	As Built		
Drawn By	MDH	Checked By			Approved By		
Date	Dec 201□	Date			Date		
Scales	Various						
Drawing No.	2514□AB□01						



C4A Commencing Contour Plot
1:1000



C4A Clay As Built Contour Plot
1:1000

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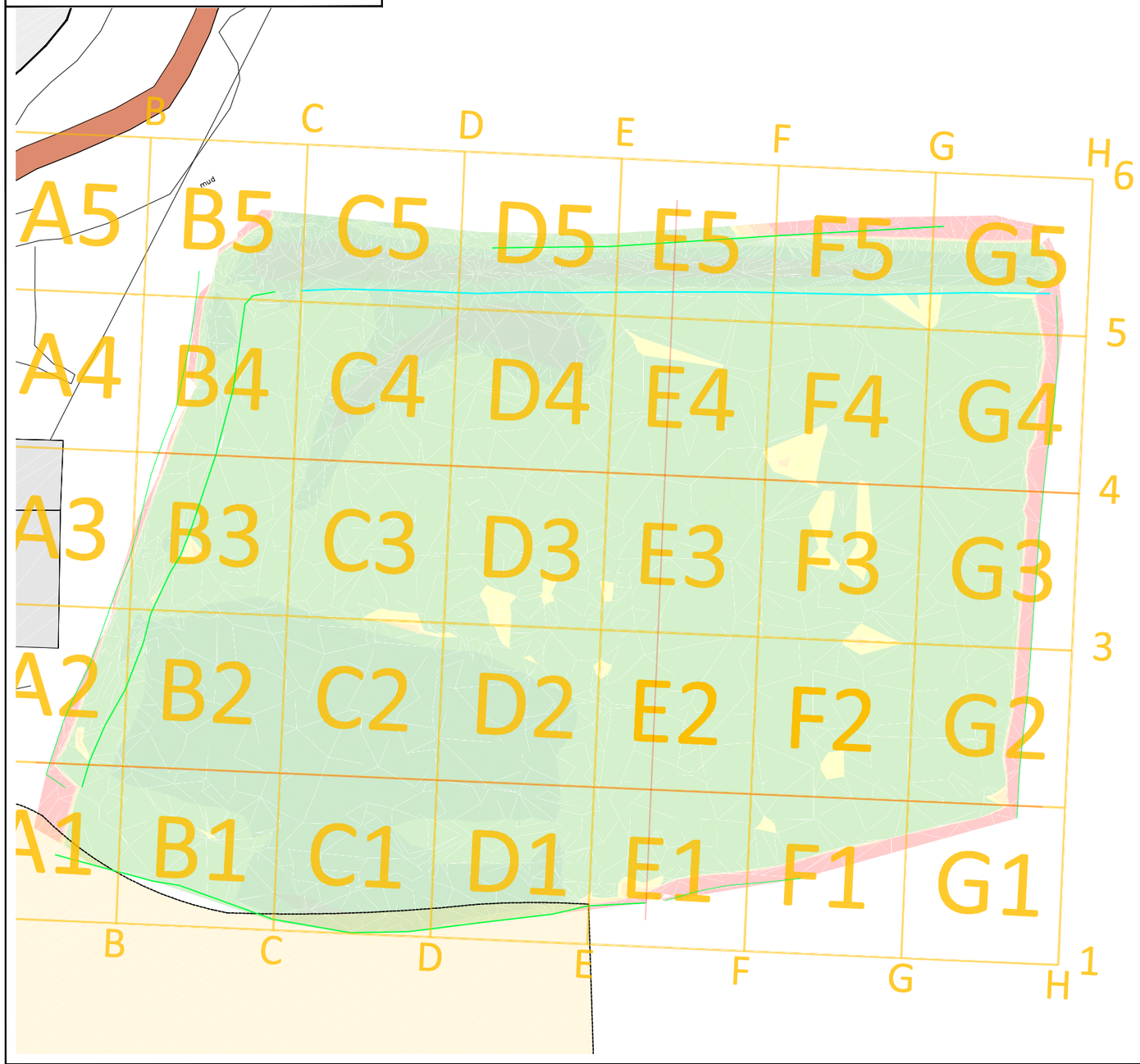
Project

Docksway Waste Disposal Site

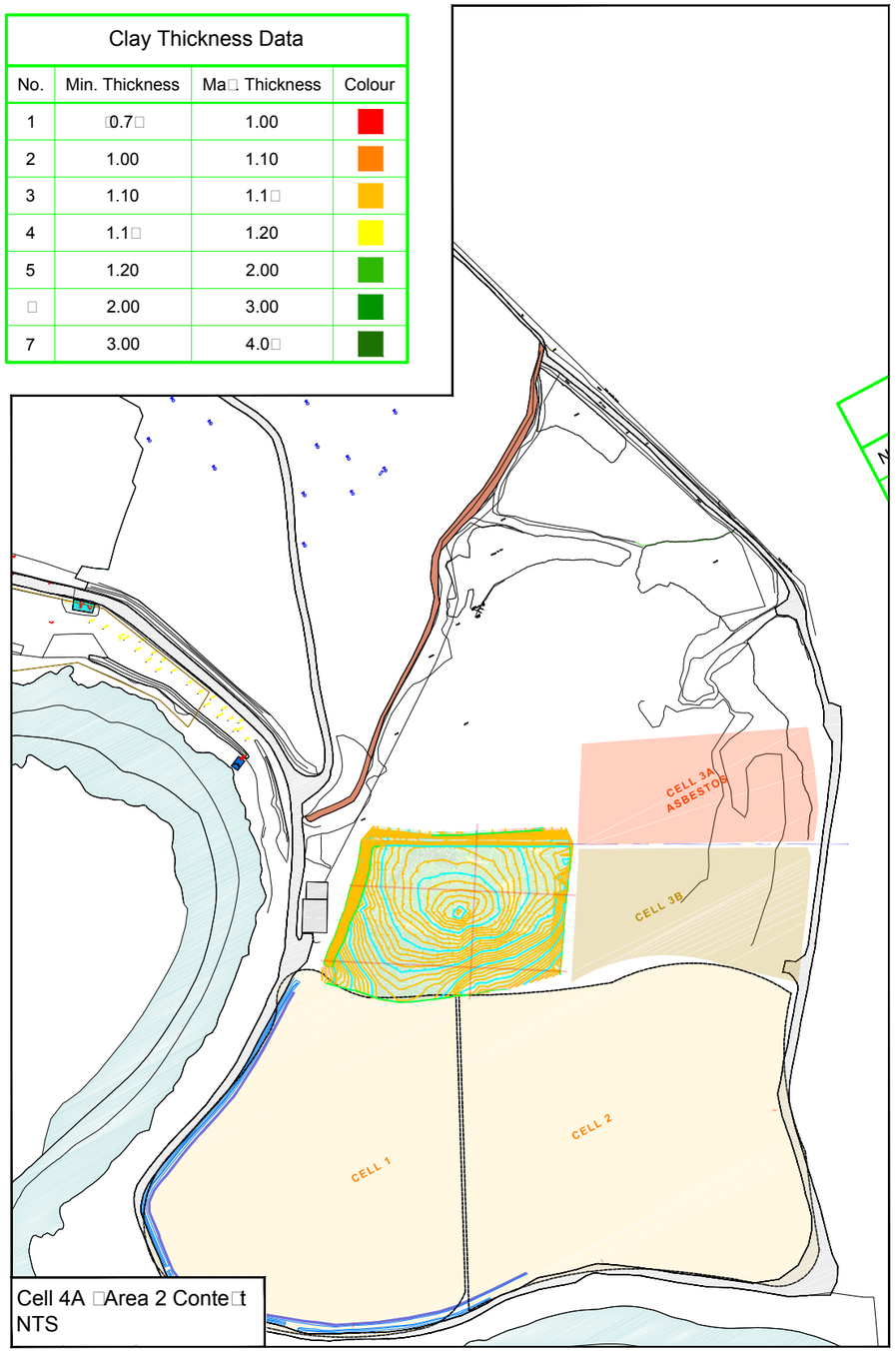
Cell 4A Clay As Built Details

File No. 2514		Status: As Built			
Drawn	MDH	Checked		Approved	
Date	Dec 201	Date		Date	
Scales	see drawing panes				
Drawing No.	2514 AB 02				

C4A As Built Clay □Isopachs □clay thickness□
1:1250



Clay Thickness Data			
No.	Min. Thickness	Ma□ Thickness	Colour
1	□0.7□	1.00	
2	1.00	1.10	
3	1.10	1.1□	
4	1.1□	1.20	
5	1.20	2.00	
□	2.00	3.00	
7	3.00	4.0□	



Cell 4A □Area 2 Conte□t
NTS

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A3 NOTES	Rev	Details	Dr	Ch	Ap	Date

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Newport CITY COUNCIL CYNGOR DINAS Casnewydd

Project
Docksway Waste Disposal Site
Cell 4A Clay Liner
As Built Details

File No. 2514		Status: As Built			
Drawn	MDH	Checked		Approved	
Date	Dec 201□	Date		Date	
Scales	see drawing panes				
Drawing No. 2514□AB□03					