Your Ref: 00040-33

Our Ref: 541771

Date: 3rd December 2020

STRUCTURAL SOILS LTD

SITE INVESTIGATION

SOIL, ROCK & MATERIAL TESTING

GEOTECHNICAL CONSULTANCY

CONTAMINATED LAND ASSESSMENT

Argyll & Bute Council
Kilmory,
Lochgilphead,
Argyll,
PA31 8RT

For the attention of SOPHIE PAICE.

Dear Sirs/Madam,

SEABED SEDIMENT ANALYSIS
IONA AND FIONNPHORT

Introduction

We write to report on the findings of the ground investigation carried out by Structural Soils Limited (SSL) at the above site on the instructions of Argyll and Bute Council.

The works undertaken included 6 seabed sediment cores and 12 grab samples of the seabed sediment, laboratory testing and the preparation of this report. The report contains a description of the site and the works carried out, the exploratory hole logs, in-situ and laboratory testing results.

The ground investigation has been carried out in accordance with the contract specification, the general requirements of BS 5930:2015 and other relevant standards.

Site Description

The site is located in the Sound of Iona, situated off the west coast of the Isle of Mull, and between the Isle of Iona. The British National Grid References of the sites are NM298234 and NM286240. The site comprises 2 areas on either side of the Sound of Iona; one location just off the jetty at Fionnphort on the south west coast of Mull, and one area off the slipway at Baile Mòr on the isle of Iona. All investigation positions were over water, and coring was carried out from a survey boat.

The sites are both approximately 200 m by 150 m in size and set at sea level.

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Wigan

SEABED SEDIMENT ANALYSIS
IONA & FIONNPHORT

Geology

Information on the geology of the site was obtained from the following sources published by the British Geological Survey (BGS):

- BGS map (sheet 43S, scale 1:50,000, published 1999).
- The BGS digital geology map, which utilises the most up to date names for geological units (www.bgs.ac.uk/data).
- The BGS Lexicon of Named Rock Units, which provides typical descriptions for most geological units (www.bgs.ac.uk/lexicon).

The Fionnphort site is shown to have marine beach deposits of sand underlain by the Ross of Mull pluton comprising monzogranite with calc-alkaline dyke suites including microgranite. The Iona site is shown to have marine beach deposits of sand, and raised marine deposits of gravels, sands and silt. This is shown to be underlain by the Iona group of metasandstone and metamudstone, with some dyke intrusions (part of the Iona – Ross of Mull dyke swarm comprising Camptonite and Monchiquite igneous rocks.

Fieldwork

The ground investigation was carried out by SSL on 4th and 5th November 2020. The following works were completed:

- 6 sediment cores to 0.65 m depth.
- 12 grab samples of the seabed sediment.

The exploratory hole logs and in-situ test results are enclosed. These provide information including the equipment and methods used, samples taken, tests carried out, water observations and descriptions of the strata encountered. Explanation of the terms and abbreviations used on the logs is given in the Key to Exploratory Hole Records which is also enclosed.

The investigation was supervised by an engineer from SSL. The scope of works and positions were selected by Argyll & Bute Council, set out by SSL and Ecospan and adjusted where necessary to take account of sea floor conditions or other restrictions. The exploratory hole and in-situ test locations are shown on the enclosed Exploratory Hole Location Plan.

The holes were logged by an engineer in general accordance with the recommendations of BS 5930:2015 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1). Detailed descriptions, together with relevant comments, are given on the logs.

Laboratory Testing

Samples for potential geotechnical testing were returned to MATtest Limited UKAS accredited laboratory, and those for potential geoenvironmental testing were sent to SOCOTEC Limited, a MCERTS and UKAS accredited testing laboratory. Laboratory tests were scheduled by Argyll and Bute Council. The test results are enclosed, and the test methods are quoted on the results sheets.

Closing Remarks

All information, comments and opinions given in this report are based on the ground conditions encountered during the site work, and on the results of laboratory and field tests performed during the investigation. Whilst every attempt is made to record full details of the strata encountered in the exploratory holes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks. However, there may be conditions at the site that have not been taken into account, such as unpredictable soil strata, contaminant concentrations and water conditions between or below exploratory holes.

This report was prepared by SSL for the sole and exclusive use of Argyll and Bute Council in response to particular instructions. Any other parties using the information contained in this report do so at their own risk and any duty of care to those parties is excluded. No liability will be accepted after a period of 5 years from the date of the report.

This concludes our work on this project. If you have any queries, please do not hesitate to contact us.

Yours sincerely,
STRUCTURAL SOILS LIMITED

<Redacted>

<Redacted>

Laura Blair MGeol FGS

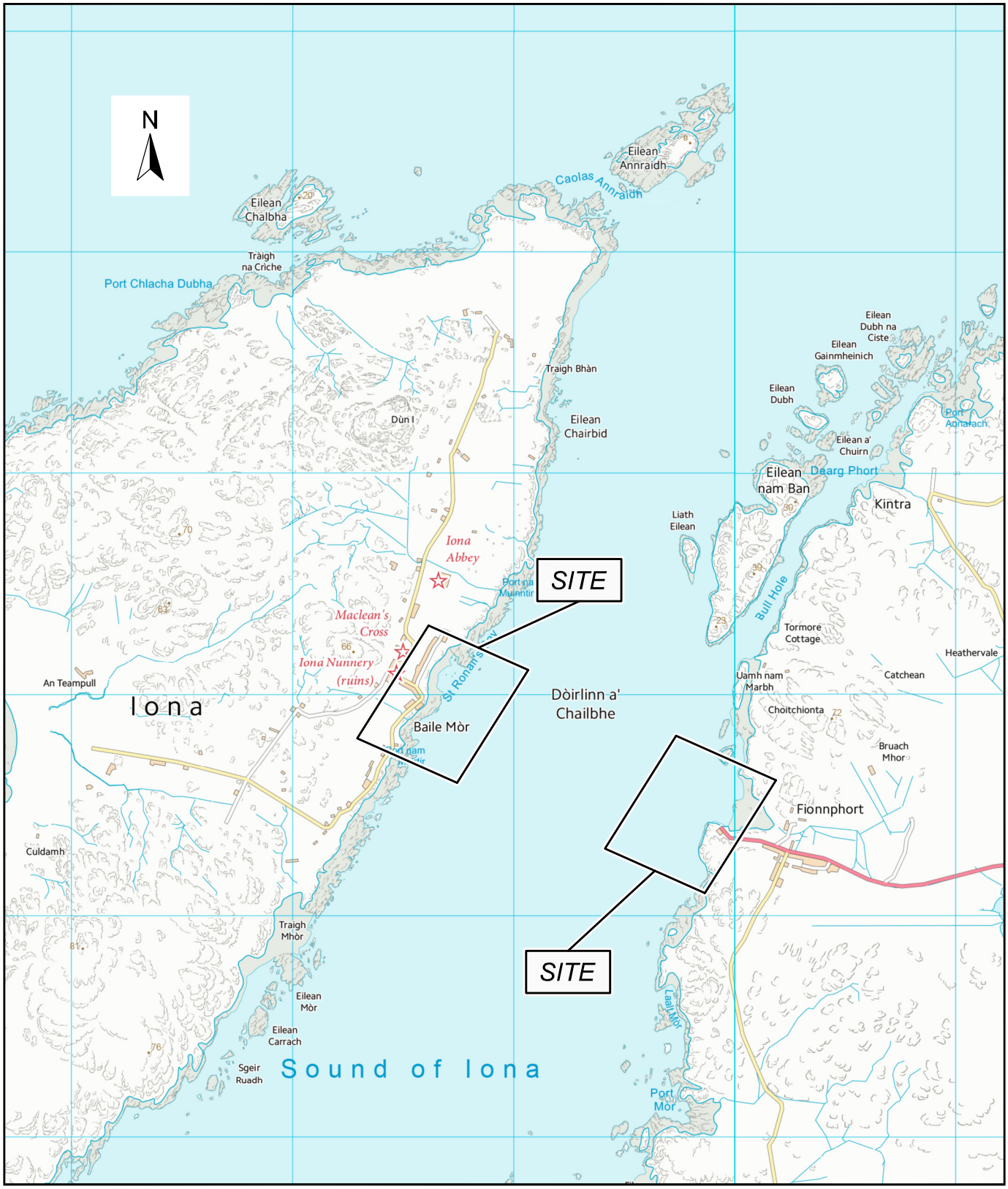
Jon Bassett BSc (Hons) MSc CGeol

References:

1. BS 5930:2015 *Code of practice for ground investigations*
2. British Geological Survey sheet 43S scale 1:50000, published 1996

Encs:

1. Site Location Map
2. Exploratory Hole Location Plan
3. Key to Exploratory Hole Logs
4. Borehole Logs
5. Trial Pit Logs
6. Laboratory Test Verification Certificate
7. Geotechnical Laboratory Test Results
8. SOCOTEC Test Verification Certificate



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REV.	DATE	DESCRIPTION	BY	CHD.	APR.
00	23.11.2020	-	MW	ZC	-

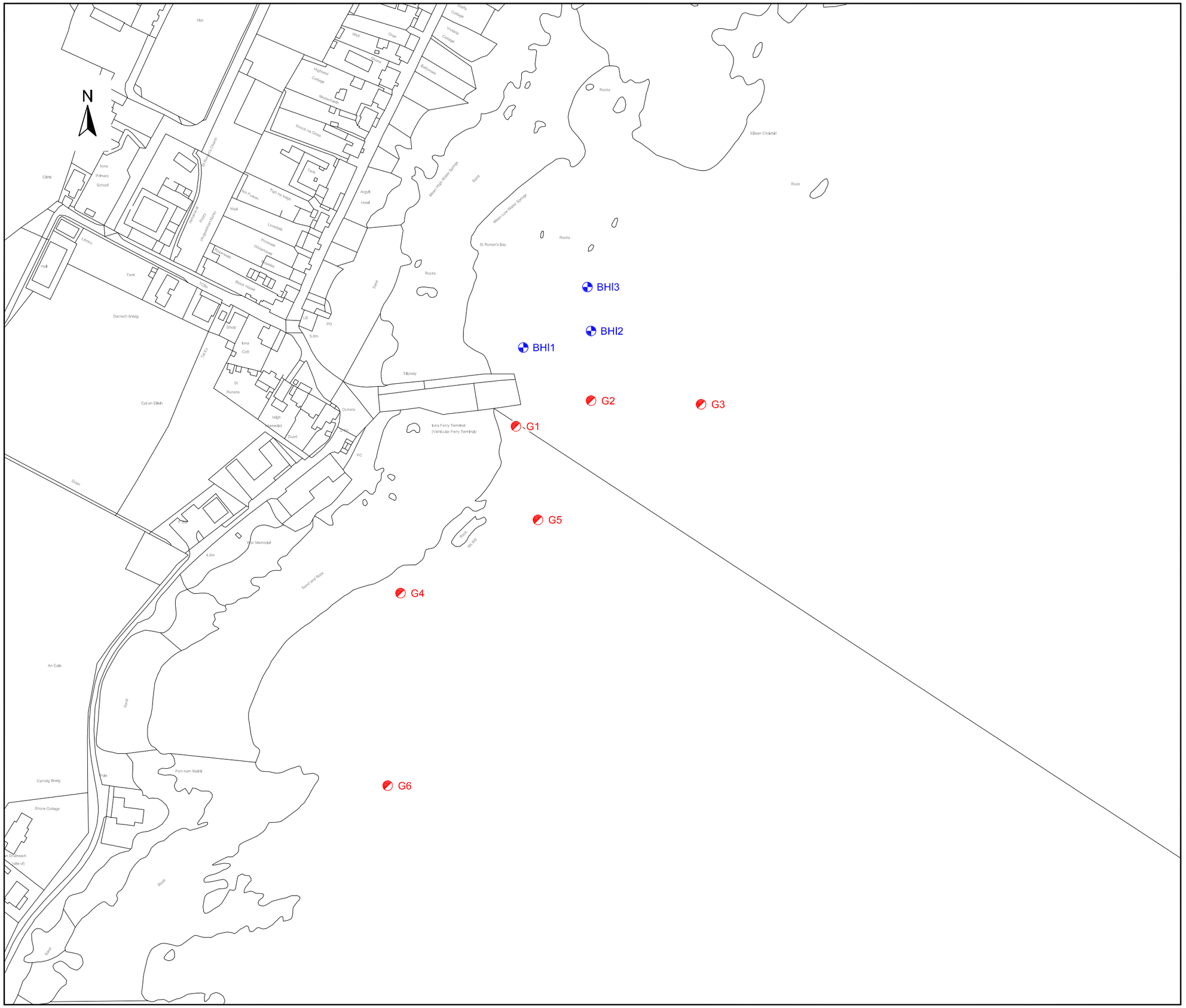
DIMENSION	SCALE	DRAWING STATUS
m	1:25,000	-

CLIENT: Argyll & Bute Council

PROJECT: Iona and Fionnphort

TITLE: SITE LOCATION MAP

JOB NO	GRID REF	SCALE BAR	ORIGIN SIZE	FIGURE
541771	NM 298 234 and NM286 240	0 250 500 750 1,000m	A4	1



LEGEND

- Borehole Location
- Sample Location

REV	DATE	DESCRIPTION	BY	CHD	APR
00	23.11.2020	-	MW	ZC	-

DIMENSION	SCALE	ORIGIN SIZE
m	1:2000	A3

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CLIENT

Argyll & Bute Council

PROJECT

Iona and Fionnphort

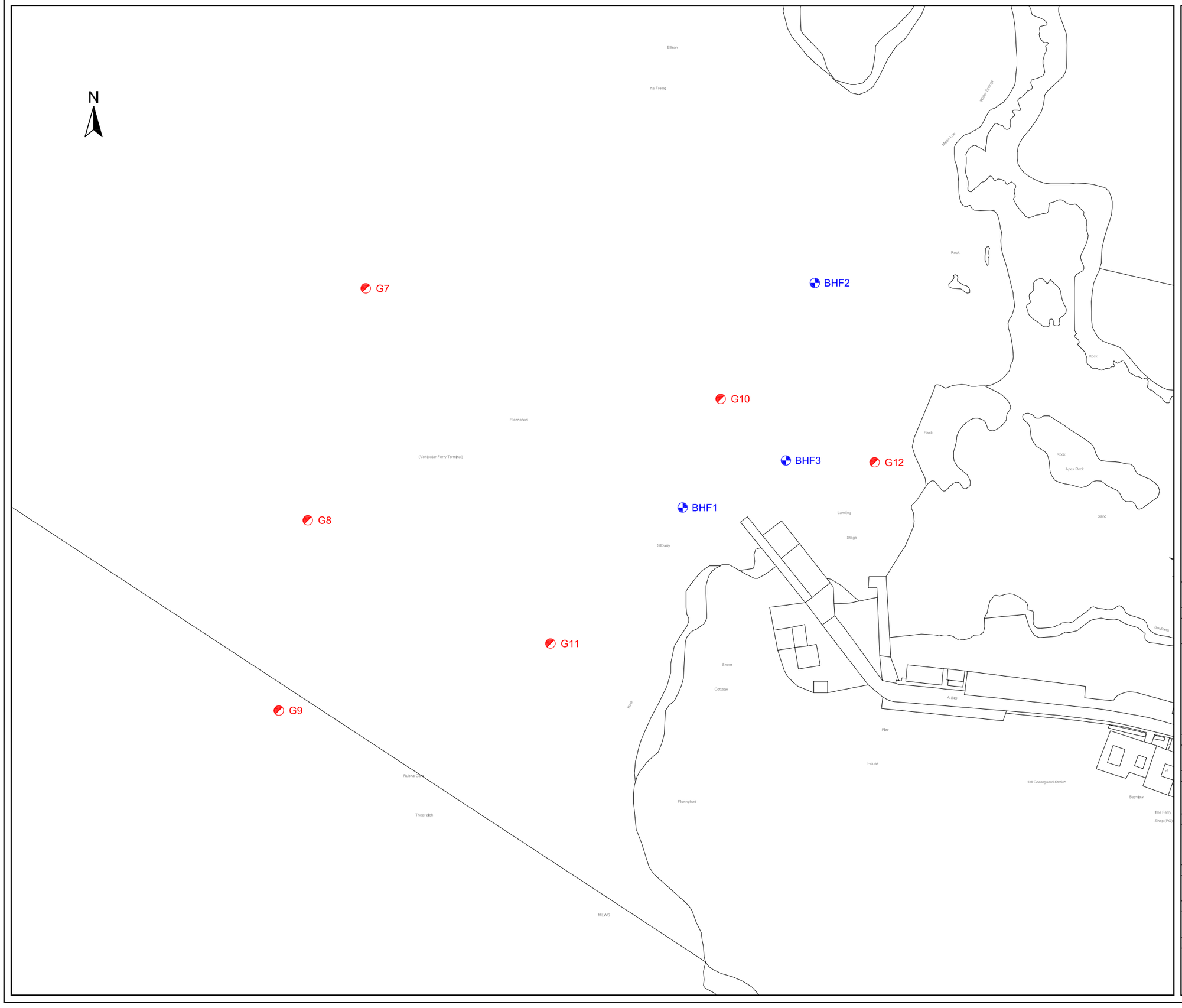
TITLE

EXPLORATORY HOLE LOCATION PLAN - IONA

JOB NO	FIGURE
541771	2a
DRAWING STATUS	REV
-	00

SCALE BAR

0 20 40 60 80 100m



LEGEND

- Borehole Location
- Sample Location

REV	DATE	DESCRIPTION	BY	CHD	APR
00	23.11.2020	-	MW	ZC	-

DIMENSION	SCALE	ORIGIN SIZE
m	1:2000	A3

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CLIENT

Argyll & Bute Council

PROJECT

Iona and Fionnphort

TITLE

EXPLORATORY HOLE LOCATION PLAN - FIONNPHORT

JOB NO	FIGURE
541771	2b
DRAWING STATUS	REV
-	00

SCALE BAR

0 20 40 60 80 100m

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF ABBREVIATIONS

SAMPLING

Sample type codes

B	=	Bulk disturbed sample.
ES	=	Soil sample for environmental testing.

ADDITIONAL NOTES

1. All soil and rock descriptions and legends in general accordance with BS EN ISO 14688-1, 14688-2, 14689-1, and BS5930:2015.
2. Material types divided by a broken line (- - -) indicates an unclear boundary.
3. Fracture spacings (If) quoted in the Description of Strata for specific strata or specific fracture sets are also quoted in mm, e.g. (25/80/230) referring to (Min/Avg/Max).
4. The data on any sheet within the report showing the AGS icon is available in the AGS format.

GINT_LIBRARY_V10_01.GLB|GrfcText G - LEGEND - 1 OF 2 | 541771-IONA-AND-FIONNPHORT.GPJ - v10_01 | 03/12/20 - 11:38 | LB9.
Structural Soils Ltd, Branch Office - Glasgow: 65 Sussex Street, Glasgow, Scotland, G41 1DX. Tel: 0141 332 8440, Fax: 0141 332 8008, Web: www.soils.co.uk, Email:north@soils.co.uk.

STRUCTURAL SOILS

Contract Reference: **541771**

KEY TO EXPLORATORY HOLE LOGS - SUMMARY OF GRAPHIC SYMBOLS

MATERIAL GRAPHIC LEGENDS


Gravelly SAND


SAND


Sandy gravelly SILT


Gravelly silty SAND


Silty gravelly SAND

INSTRUMENTATION SYMBOLS


Backfill

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Iona and Fionnphort	**Argyll & Bute Council**	**BHF-1**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	**04.11.20** End: **04.11.20**	**---**	**E:129859.0 N:723457.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.15	101	ES				Light grey fine to medium SAND with shell fragments.	0.20	
0.15-0.50	102	ES				Grey speckled white slightly gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	0.50	
						Terminated at 0.50m depth as scheduled. Obstruction noted at base.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. 2 inch diameter barrel used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Red acted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Iona and Fionnphort		**Argyll & Bute Council**		**BHF-1**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129859.0 N:723457.0**	**2** of **2**

BHF1 0.00 - 0.50m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Iona and Fionnphort	**Argyll & Bute Council**	**BHF-2**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	**04.11.20** End: **04.11.20**	**---**	**E:129932.0 N:723581.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.15	101	ES				Light grey speckled white slightly gravelly fine to medium SAND with shell fragments. Gravel is rare subangular to subrounded fine to medium of mixed lithologies.	0.45	
0.20-0.58	102	ES				Light grey speckled white and orange slightly gravelly fine to medium SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	0.58	
						Terminated at 0.58m depth due to encountering repeated obstruction.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. 3 attempts taken to recover material to 0.58m depth.
2. 2 inch diameter barrel used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redact

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Iona and Fionnphort		**Argyll & Bute Council**		**BHF-2**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129932.0 N:723581.0**	**2** of **2**

BHF2 0.00-0.58m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Iona and Fionnphort	**Argyll & Bute Council**	**BHF-3**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	**04.11.20** End: **04.11.20**	**---**	**E:129916.0 N:723483.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.15	101	ES				Sea grass overlying light grey speckled white fine to medium SAND with shell fragments. Gravel is rare subangular to subrounded fine to medium of mixed lithologies.	0.30	
0.15-0.55	102	ES				Light grey speckled white slightly gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	0.55	
						Terminated at 0.50m depth due to repeated obstruction.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. 3 attempts taken to recover material to 0.55m depth.
2. 2 inch diameter barrel used.
3. Position moved due to rock on seabed.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Iona and Fionnphort		**Argyll & Bute Council**		**BHF-3**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129916.0 N:723483.0**	**2** of **2**

BHF3 0.00 - 0.55m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redact

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Iona and Fionnphort	**Argyll & Bute Council**	**BHI-1**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	**05.11.20** End: **05.11.20**	**---**	**E:128682.0 N:724029.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.15	101	ES				Light grey slightly gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	(0.70)	
0.20-0.70	102	ES				. . . at 0.15. depth becomes grey speckled.		
							0.70	
						Terminated at 0.70m depth as scheduled.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. 4 attempts taken to recover material to 0.70m depth.
2. 2 inch diameter barrel used.
3. Position moved due to rock on seabed.

All dimensions in metres | Scale: **1:50**

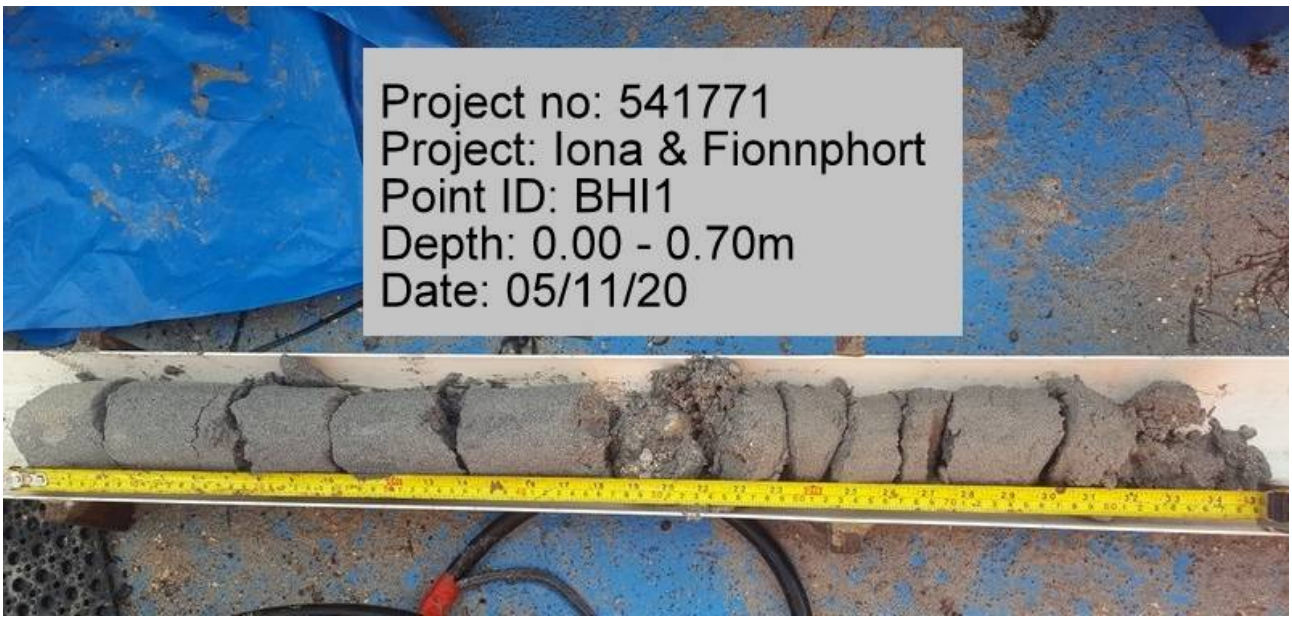
Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Iona and Fionnphort		**Argyll & Bute Council**		**BHI-1**
Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128682.0 N:724029.0**	**2** of **2**

BHI1 0.00 - 070m



Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Iona and Fionnphort	**Argyll & Bute Council**	**BHI-2**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	**05.11.20** End: **05.11.20**	**---**	**E:128719.0 N:724038.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.15	101	ES				Light grey speckled white slightly gravelly fine to medium SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	0.45	
0.15-0.45	102	ES				. . . at 0.20m depth becomes speckled white.		
						Terminated at 0.45m depth due to obstruction.		

Boring Progress and Water Observations					
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. 3 attempts taken to recover material to 0.45m depth.
2. 2 inch diameter barrel used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Iona and Fionnphort		**Argyll & Bute Council**		**BHI-2**
Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128719.0 N:724038.0**	**2** of **2**

BHI2 0.00 - 0.45m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:	Client:	Borehole:
Iona and Fionnphort	**Argyll & Bute Council**	**BHI-3**

Contract Ref:	Start:	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	**05.11.20** End: **05.11.20**	**---**	**E:128717.0 N:724062.0**	**1** of **2**

Depth (m)	Samples & Testing: No	Type	Results	Backfill	Water	Description of Strata	Depth (Thickness)	Material Graphic Legend
0.00-0.15	101	ES				Light grey speckled white fine to medium SAND with shell fragments.	(0.65)	
0.15-0.40	102	ES				. . . at 0.20m depth becomes grey speckled white.		
0.40-0.65	103	ES					0.65	
						Terminated at 0.65m depth due to repeated obstruction.		

Boring Progress and Water Observations

Date	Time	Borehole Depth	Casing Depth	Borehole Diameter (mm)	Water Depth

General Remarks

1. 3 attempts taken to recover material to 0.65m depth.
2. 2 inch diameter barrel used.

All dimensions in metres | Scale: **1:50**

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

BOREHOLE LOG

Contract:		Client:		Borehole:
Iona and Fionnphort		**Argyll & Bute Council**		**BHI-3**
Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128717.0 N:724062.0**	**2** of **2**

BHI3 0.00 - 0.65m

Method Used:	Plant Used:	Drilled By:	Logged By:	Checked By:
Vibrocore	**Bespoke Rig**	**Mark Field**	**ZCockburn**	<Redacted

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G1**

Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128678.0 N:723986.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white fine to coarse SAND with shell fragments.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

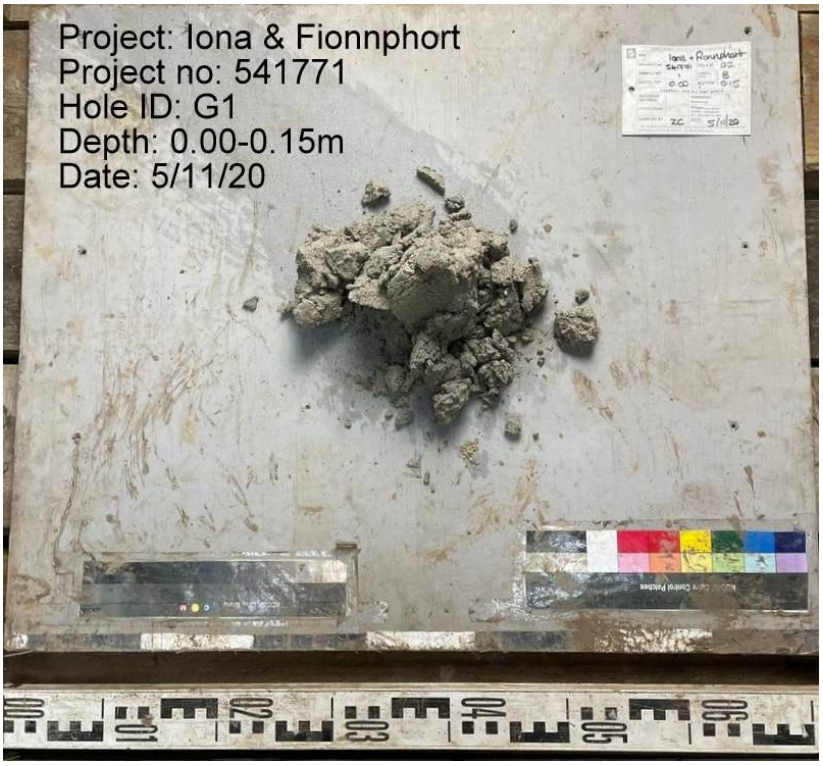
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G1**
Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128678.0 N:723986.0**	**2** of **2**

G1 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G2**

Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128719.0 N:724000.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G2**
Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128719.0 N:724000.0**	**2** of **2**

G2 0.00-0.15m

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G3**

Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128779.0 N:723998.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

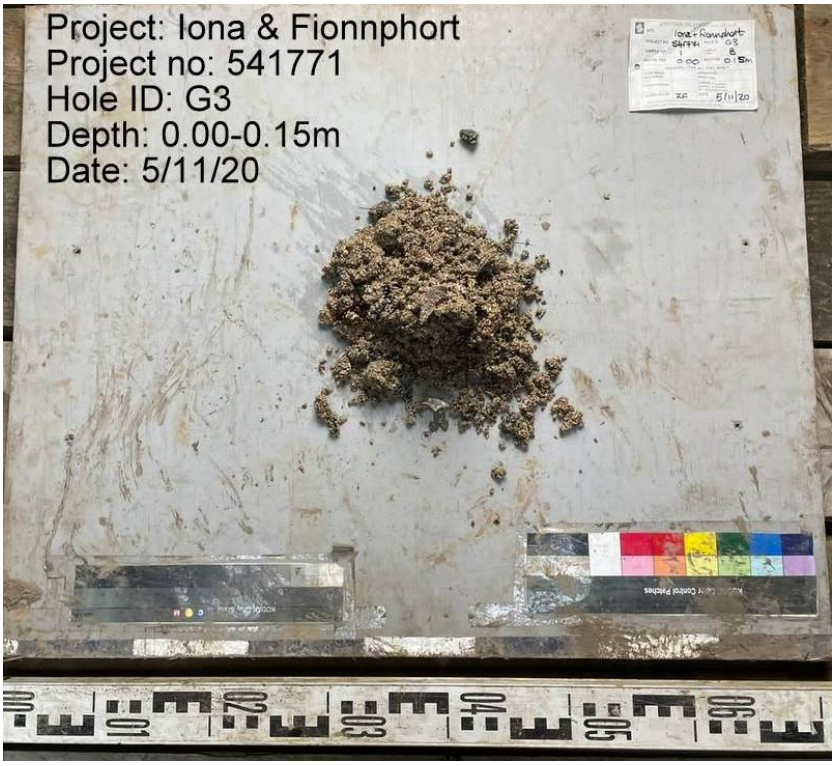
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G3**
Contract Ref:	Start: **05.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **05.11.20**	**---**	**E:128779.0 N:723998.0**	**2** of **2**

G3 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G4**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:128615.0 N:723895.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white fine to medium SAND with shell fragments.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

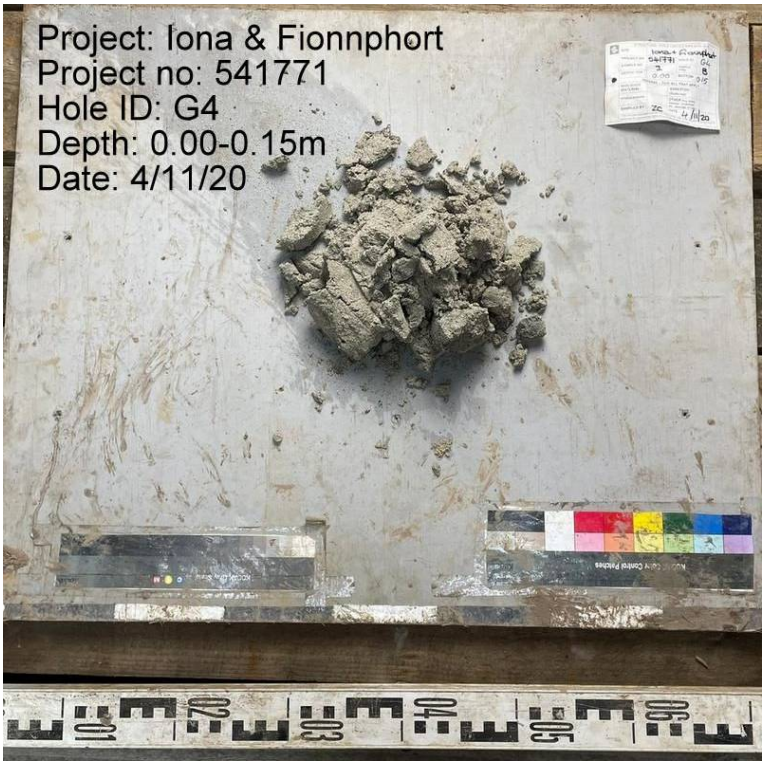
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G4**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:128615.0 N:723895.0**	**2** of **2**

G4 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G5**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:128690.0 N:723935.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white slightly gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to medium of mixed lithologies.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.
2. Repeat attempts to recover sediment due to rock on seabed.

All dimensions in metres | Scale: **1:25**

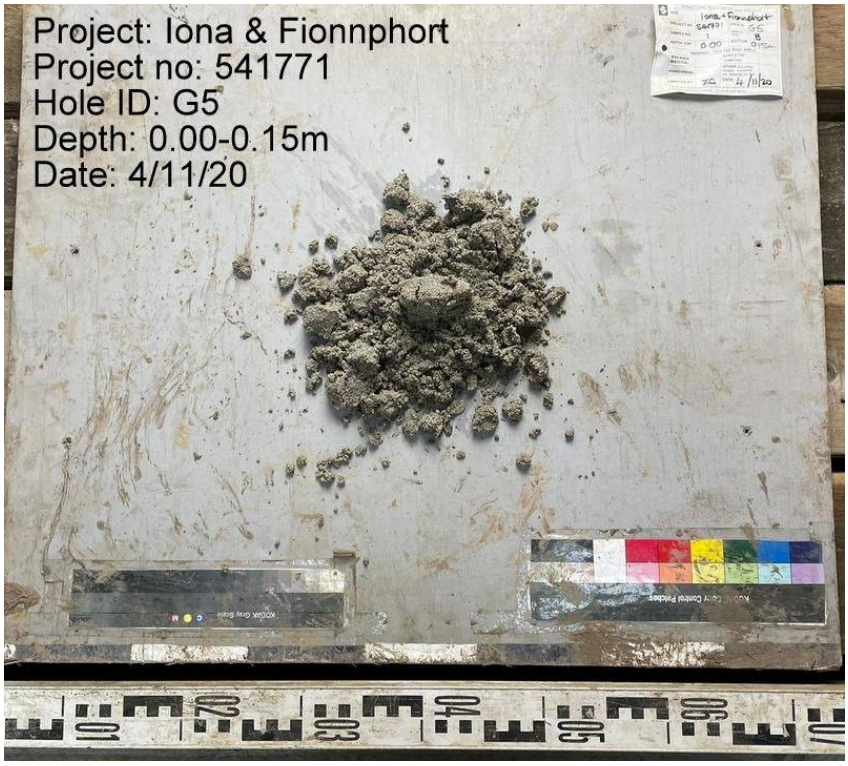
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G5**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:128690.0 N:723935.0**	**2** of **2**

G5 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G6**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:128608.0 N:723790.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white fine to medium SAND with shell fragments.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

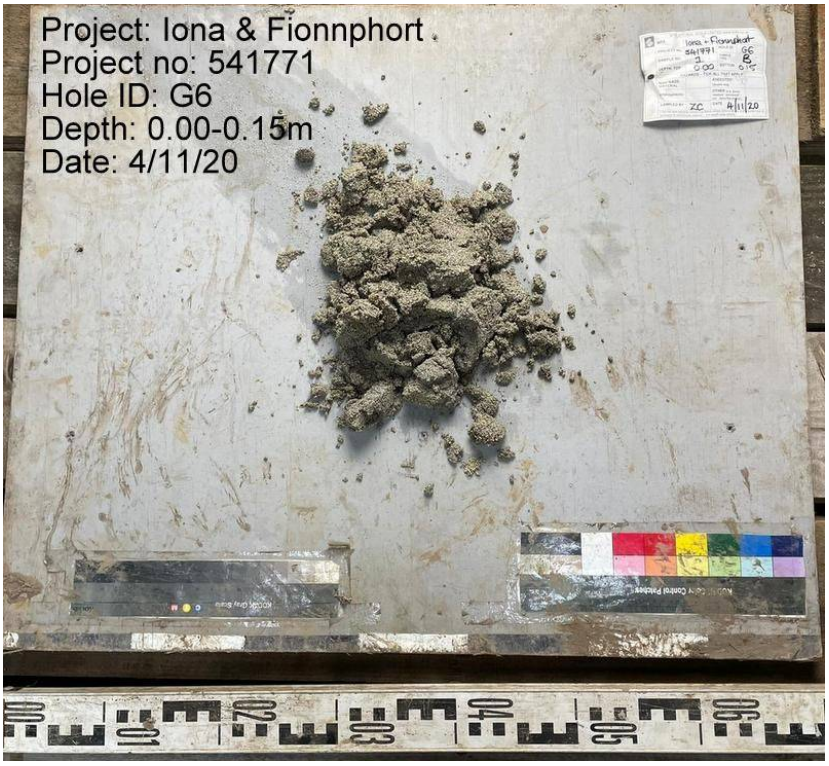
STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G6**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:128608.0 N:723790.0**	**2** of **2**

G6 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G7**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129684.0 N:723578.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white fine to medium SAND with shell fragments and occasional maerl fragments.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

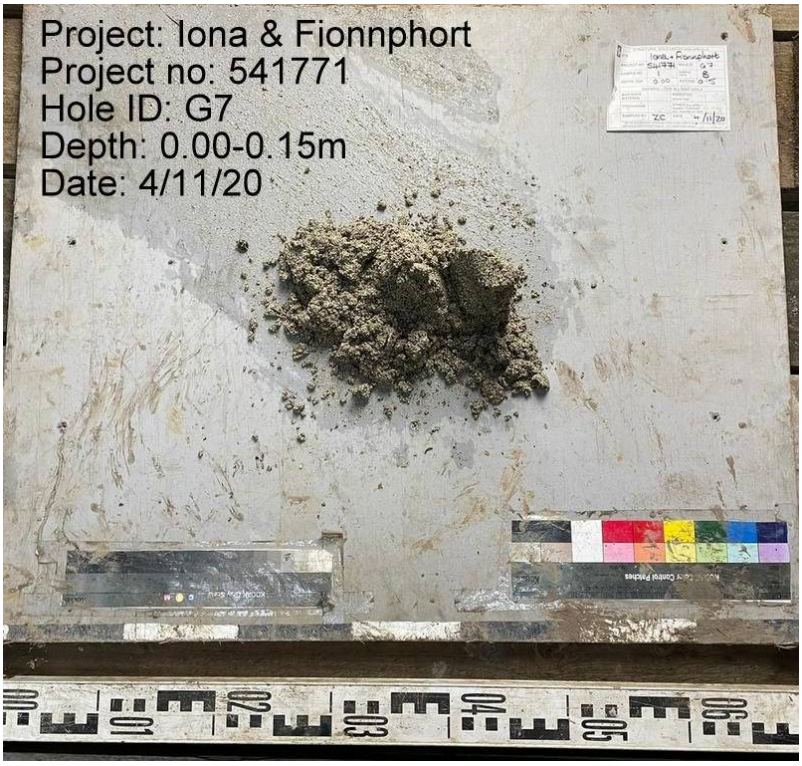
STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G7**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129684.0 N:723578.0**	**2** of **2**

G7 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G8**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129652.0 N:723450.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white fine to medium SAND with shell fragments.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

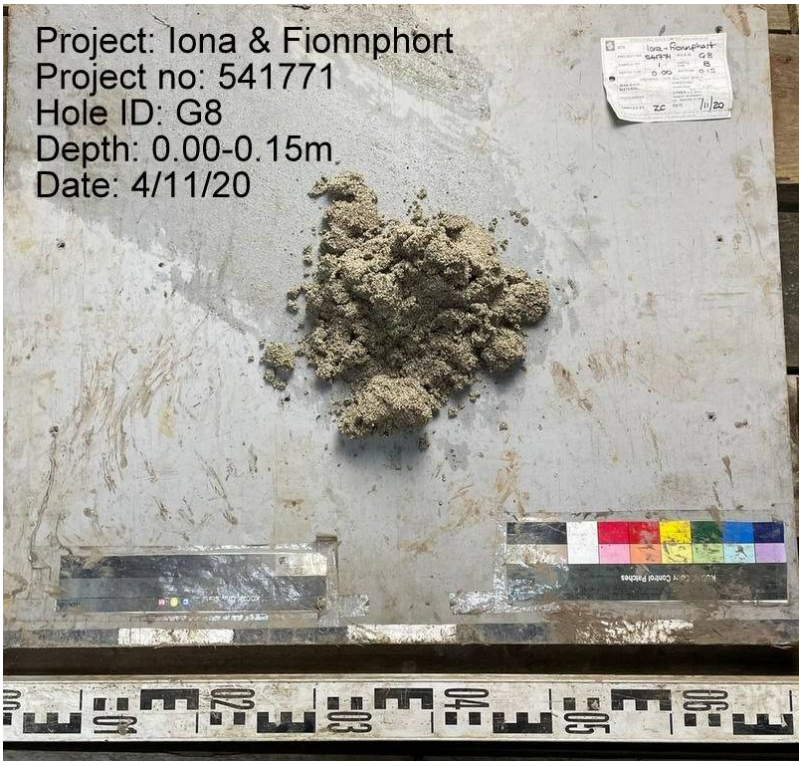
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G8**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129652.0 N:723450.0**	**2** of **2**

G8 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G9**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129636.0 N:723345.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white slightly gravelly fine to medium SAND with shell fragments. Gravel is subangular to subrounded fine to coarse of mixed lithologies.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

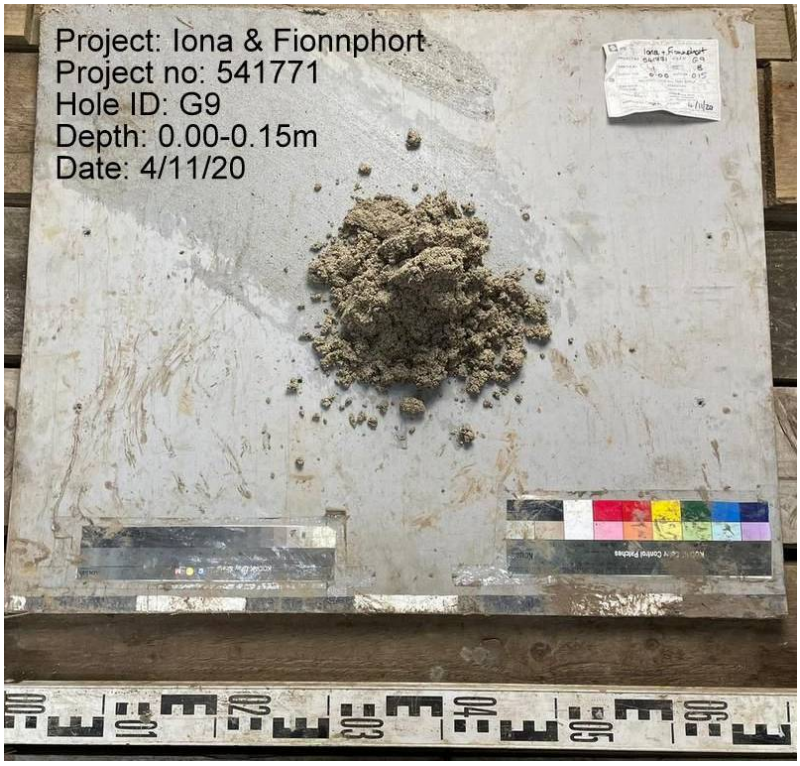
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G9**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129636.0 N:723345.0**	**2** of **2**

G9 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G10**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129880.0 N:723517.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to coarse predominantly fine to medium of mixed lithologies.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

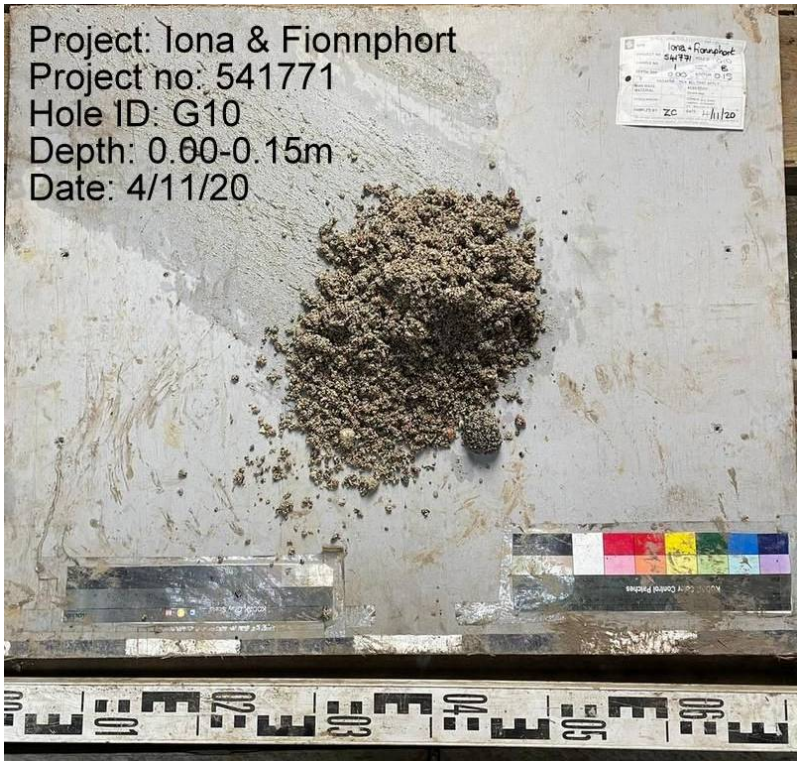
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G10**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129880.0 N:723517.0**	**2** of **2**

G10 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G11**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129786.0 N:723382.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white fine to medium SAND with shell fragments.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

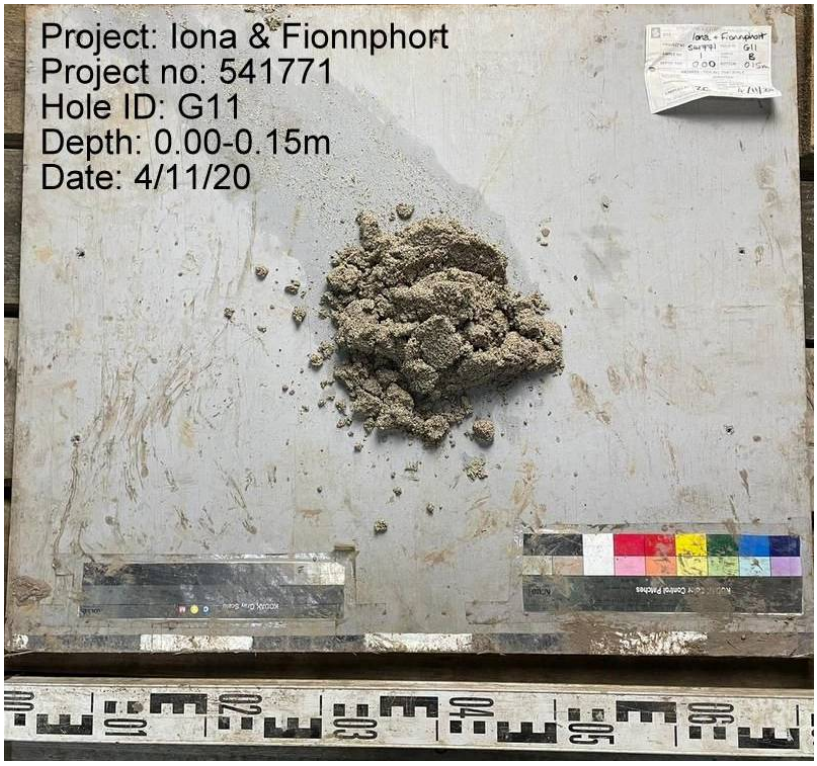
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G11**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129786.0 N:723382.0**	**2** of **2**

G11 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:	Client:	Trial Pit:
Iona and Fionnphort	**Argyll & Bute Council**	**G12**

Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129965.0 N:723482.0**	**1** of **2**

Samples and In-situ Tests				Water	Backfill	Description of Strata	Depth (Thickness)	Material Graphic Legend
Depth	No	Type	Results					
0.00-0.15	1	B				Light grey speckled white gravelly fine to coarse SAND with shell fragments. Gravel is subangular to subrounded fine to coarse predominantly fine to medium of mixed lithologies.	0.15	
						Trial pit terminated at 0.15m depth.		

General Remarks

1. Grab sample retrieved from seabed level to 0.15m depth.

All dimensions in metres | Scale: **1:25**

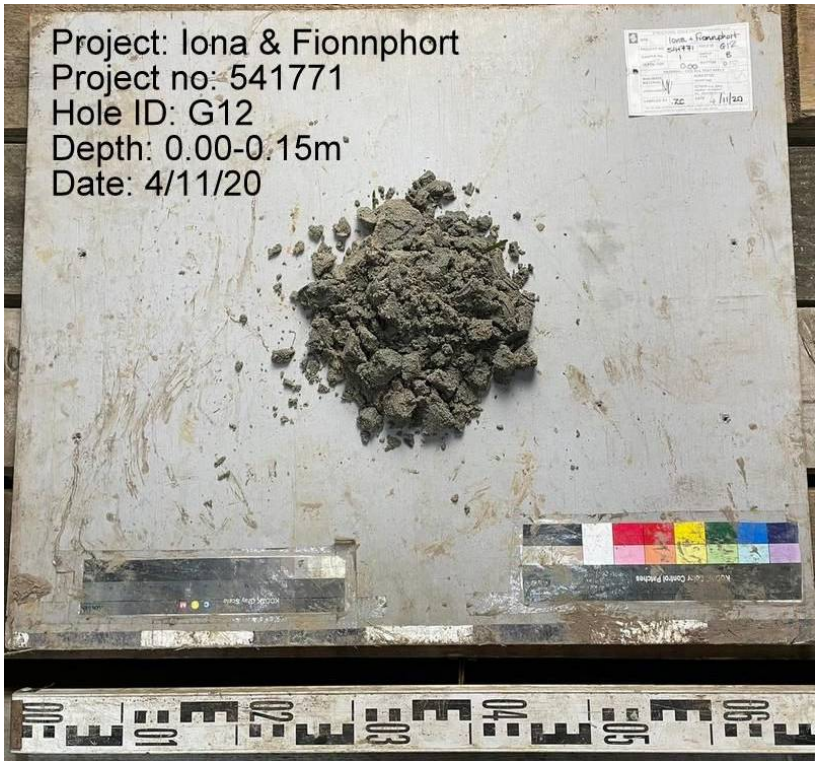
Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

STRUCTURAL SOILS

GRAB LOG

Contract:		Client:		Trial Pit:
Iona and Fionnphort		**Argyll & Bute Council**		**G12**
Contract Ref:	Start: **04.11.20**	Ground Level:	National Grid Co-ordinate:	Sheet:
541771	End: **04.11.20**	**---**	**E:129965.0 N:723482.0**	**2** of **2**

G12 0.00-0.15m



Method Used:	Plant Used:	Logged By:	Checked By:
Hand dug	**Hand tools**	**ZCockburn**	<Redacted>

LABORATORY TEST CERTIFICATE

MATtest Limited
materials testing & consultancy

10 Queenslie Point
Queenslie Industrial Estate
120 Stepps Road
Glasgow
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org
Website: www.mattest.org

Certificate No : **20/1077 - 01**

To : **Zoe Cockburn**

Client : **Structural Soils Ltd.**
65 Sussex Street
Glasgow
G41 1DX

Dear Sirs,

LABORATORY TESTING OF SOIL

Introduction

We refer to samples taken from Iona & Fionnphort and delivered to our laboratory on 13th November 2020.

Material & Source

Sample Reference	:	See Report Plates
Sampled By	:	Client
Sampling Certificate	:	Not Supplied
Location	:	See Report Plates
Description	:	See Page 2
Date Sampled	:	Not Supplied
Date Tested	:	13th November 2020 Onwards
Source	:	541771 - Iona & Fionnphort

Test Results;

As Detailed On Page 2 to Page 17 inclusive

Comments;

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation
This report should not be reproduced except in full without the written approval of the laboratory
All remaining samples for this project will be disposed of 28 days after issue of this test certificate

Remarks;

Approved for Issue

T McLelland (Director)

Date 27/11/2020

UKAS TESTING
2643

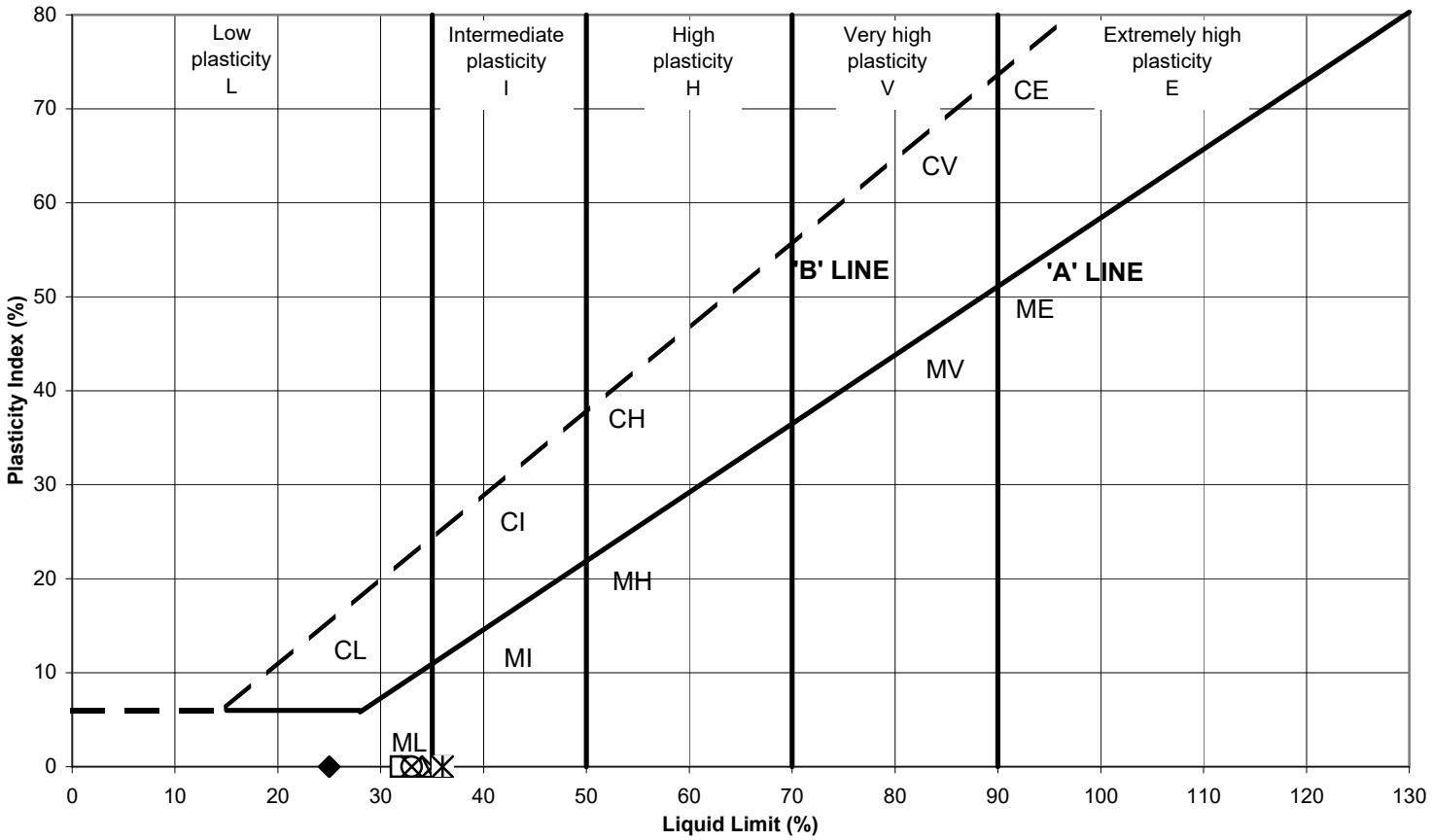
BOREHOLE	SAMPLE	DEPTH (m)	SAMPLE DESCRIPTION
G1	B1	0.00-0.15	Grey fine to medium SAND.
G2	B1	0.00-0.15	Grey fine to coarse SAND and GRAVEL with organic fibres. Gravel is fine to coarse.
G3	B1	0.00-0.15	Brown fine to coarse SAND and GRAVEL.
G4	B1	0.00-0.15	Grey slightly clayey fine to coarse SAND.
G5	B1	0.00-0.15	Grey gravelly fine to coarse SAND with shell fragments. Gravel is fine to medium.
G6	B1	0.00-0.15	Grey slightly gravelly fine to coarse SAND with shell fragments. Gravel is fine to medium.
G7	B1	0.00-0.15	Grey slightly gravelly fine to coarse SAND with shell fragments. Gravel is fine.
G8	B1	0.00-0.15	Grey slightly gravelly fine to coarse SAND. Gravel is fine.
G9	B1	0.00-0.15	Grey gravelly fine to coarse SAND. Gravel is fine to medium.
G10	B1	0.00-0.15	Grey fine to coarse SAND and GRAVEL with shell fragments and seaweed.
G11	B1	0.00-0.15	Brown / grey fine to coarse SAND.
G12	B1	0.00-0.15	Grey fine to coarse SAND.

SUMMARY OF SAMPLE DESCRIPTIONS

BOREHOLE	SAMPLE	DEPTH (m)	MOISTURE CONTENT (%)
G1	B1	0.00-0.15	31
G2	B1	0.00-0.15	23
G3	B1	0.00-0.15	17
G4	B1	0.00-0.15	31
G5	B1	0.00-0.15	27
G6	B1	0.00-0.15	29
G7	B1	0.00-0.15	32
G8	B1	0.00-0.15	30
G9	B1	0.00-0.15	31
G10	B1	0.00-0.15	16
G11	B1	0.00-0.15	35
G12	B1	0.00-0.15	30

Tested in accordance with BS 1377: Part 2: 1990: Clause 3

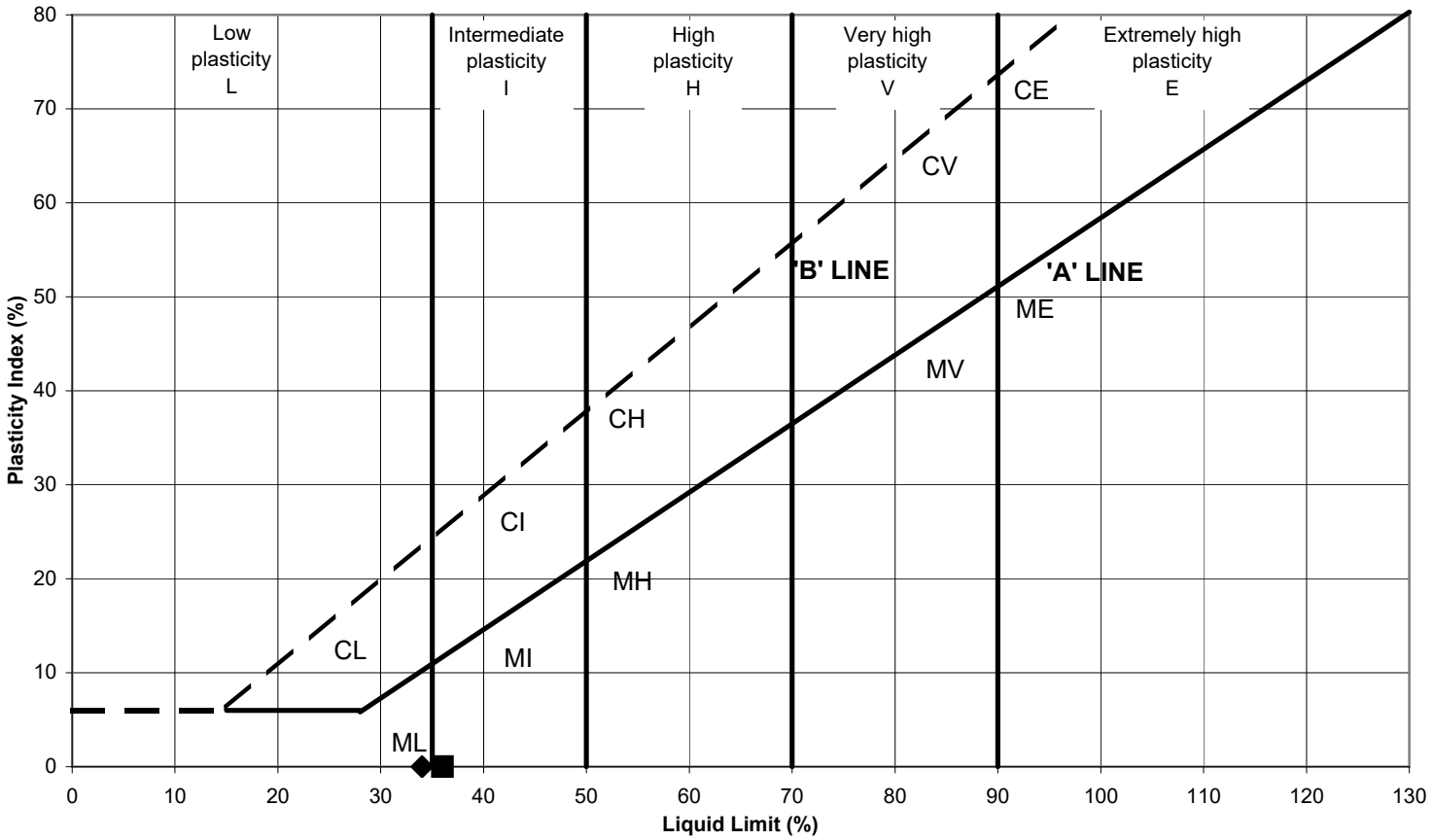
SUMMARY OF MOISTURE CONTENT TEST RESULTS



Symbol	Borehole	Sample	Depth	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing 0.425mm Sieve	Remarks
■	G1	B1	0.00-0.15	31	36	Non Plastic	Non Plastic	99	
◆	G2	B1	0.00-0.15	23	25	Non Plastic	Non Plastic	49	
▲	G3	B1	0.00-0.15	17	32	Non Plastic	Non Plastic	30	
●	G4	B1	0.00-0.15	31	32	Non Plastic	Non Plastic	98	
□	G5	B1	0.00-0.15	27	32	Non Plastic	Non Plastic	81	
◇	G6	B1	0.00-0.15	29	34	Non Plastic	Non Plastic	83	
△	G7	B1	0.00-0.15	32	34	Non Plastic	Non Plastic	43	
○	G8	B1	0.00-0.15	30	33	Non Plastic	Non Plastic	45	
×	G9	B1	0.00-0.15	31	33	Non Plastic	Non Plastic	68	
✳	G10	B1	0.00-0.15	16	36	Non Plastic	Non Plastic	26	

All samples were tested in accordance with BS 1377 : Part 2 : 1990 Clause 4.4, 5.3 and 5.4.
All samples were washed on a 0.425mm test sieve prior to test.

SUMMARY OF ATTERBERG LIMITS TEST RESULTS



Symbol	Borehole	Sample	Depth	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	% Passing 0.425mm Sieve	Remarks
■	G11	B1	0.00-0.15	35	36	Non Plastic	Non Plastic	62	
◆	G12	B1	0.00-0.15	30	34	Non Plastic	Non Plastic	99	
▲									
●									
□									
◇									
△									
○									
×									
✳									

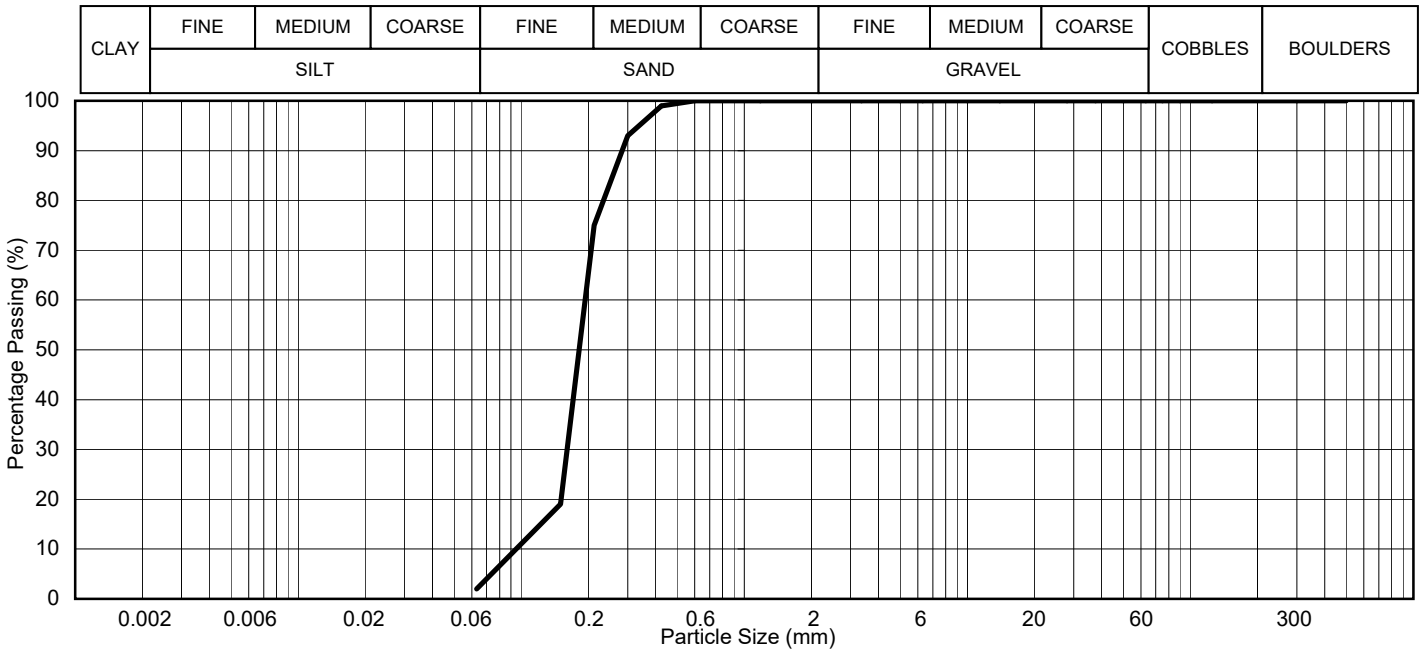
All samples were tested in accordance with BS 1377 : Part 2 : 1990 Clause 4.4, 5.3 and 5.4.
All samples were washed on a 0.425mm test sieve prior to test.

SUMMARY OF ATTERBERG LIMITS TEST RESULTS

STRUCTURAL SOILS LIMITED
IONA & FIONNPHORT

MATtest Limited
materials testing & consultancy

Borehole	G1
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-	**PERCENTAGE SOIL TYPES**	
6.30	100	-	-		
5.00	100	-	-		
3.35	100	-	-		
2.00	100	-	-		
1.18	100	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	100	-	-		
0.425	99	-	-		
0.300	93	-	-		
0.212	75	-	-		
0.150	19	-	-		
0.063	2	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	2	98	0	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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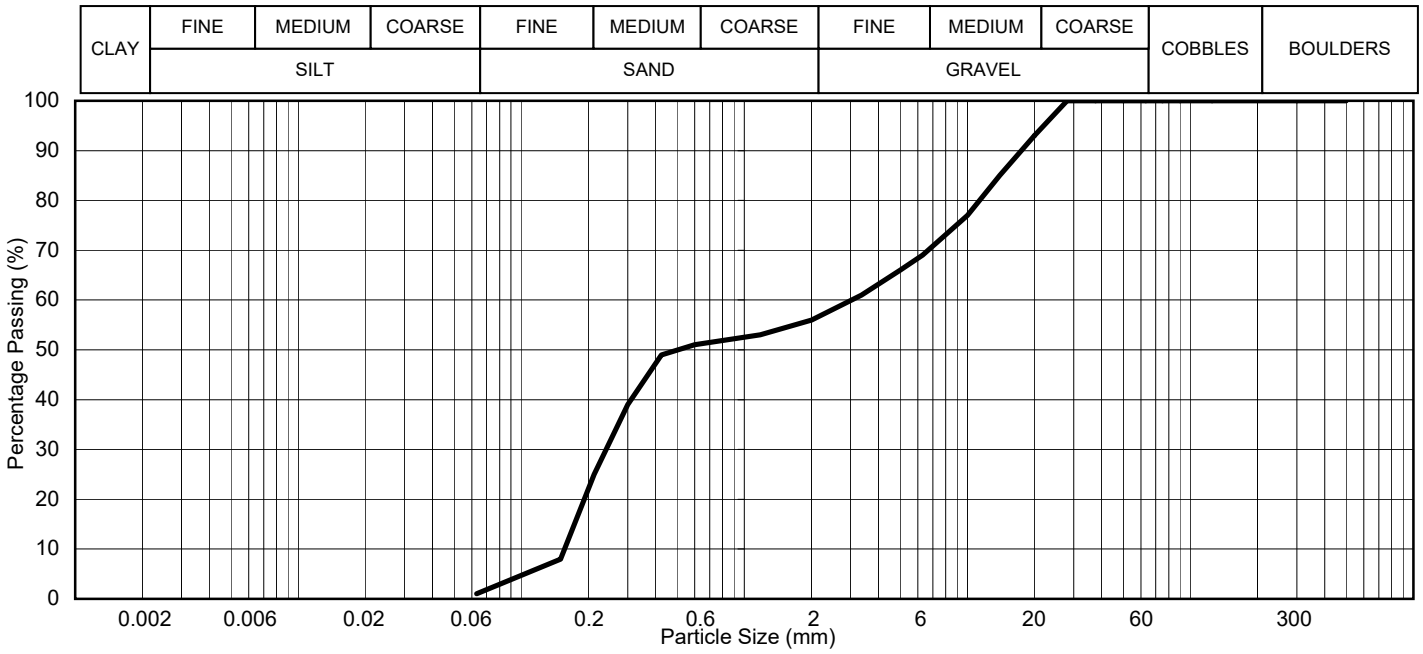
Borehole	G2
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	93	-	-		
14.0	85	-	-		
10.0	77	-	-	**PERCENTAGE SOIL TYPES**	
6.30	69	-	-		
5.00	66	-	-		
3.35	61	-	-		
2.00	56	-	-		
1.18	53	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	51	-	-		
0.425	49	-	-		
0.300	39	-	-		
0.212	25	-	-		
0.150	8	-	-		
0.063	1	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	1	55	44	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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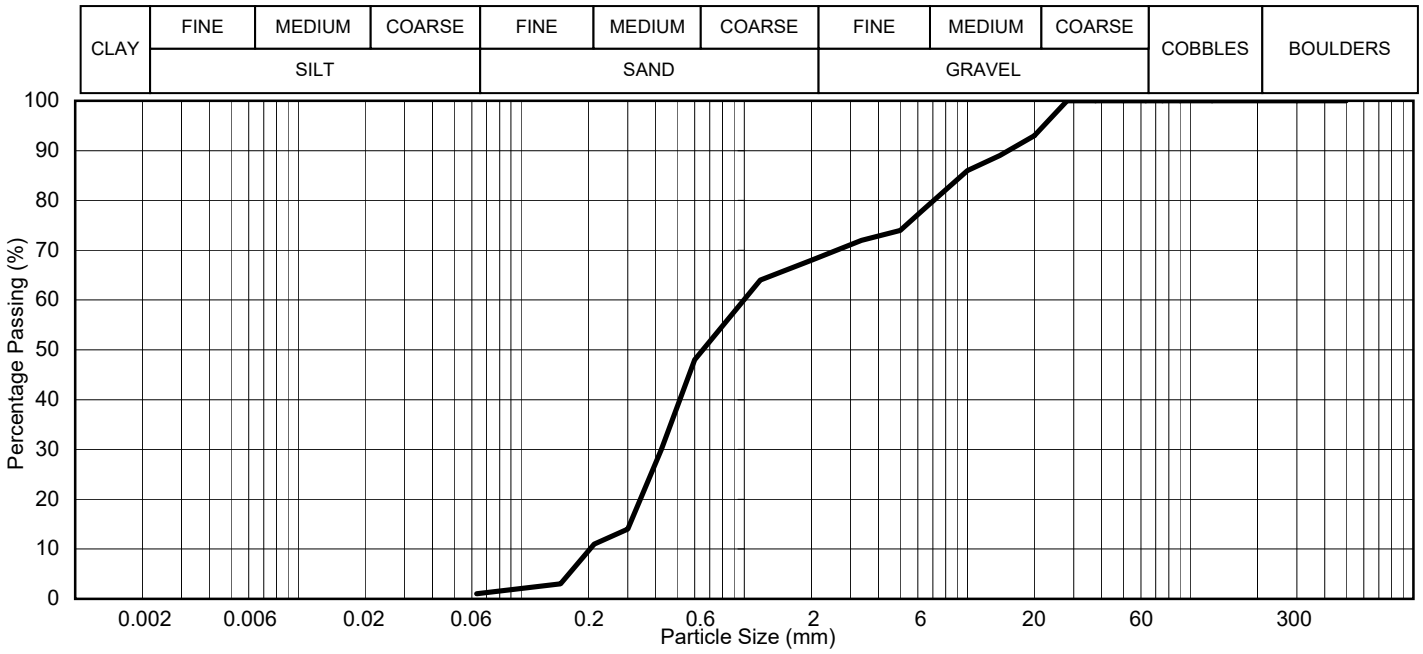
Borehole	G3
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	93	-	-		
14.0	89	-	-		
10.0	86	-	-	**PERCENTAGE SOIL TYPES**	
6.30	78	-	-		
5.00	74	-	-		
3.35	72	-	-		
2.00	68	-	-		
1.18	64	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	48	-	-		
0.425	30	-	-		
0.300	14	-	-		
0.212	11	-	-		
0.150	3	-	-		
0.063	1	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	1	67	32	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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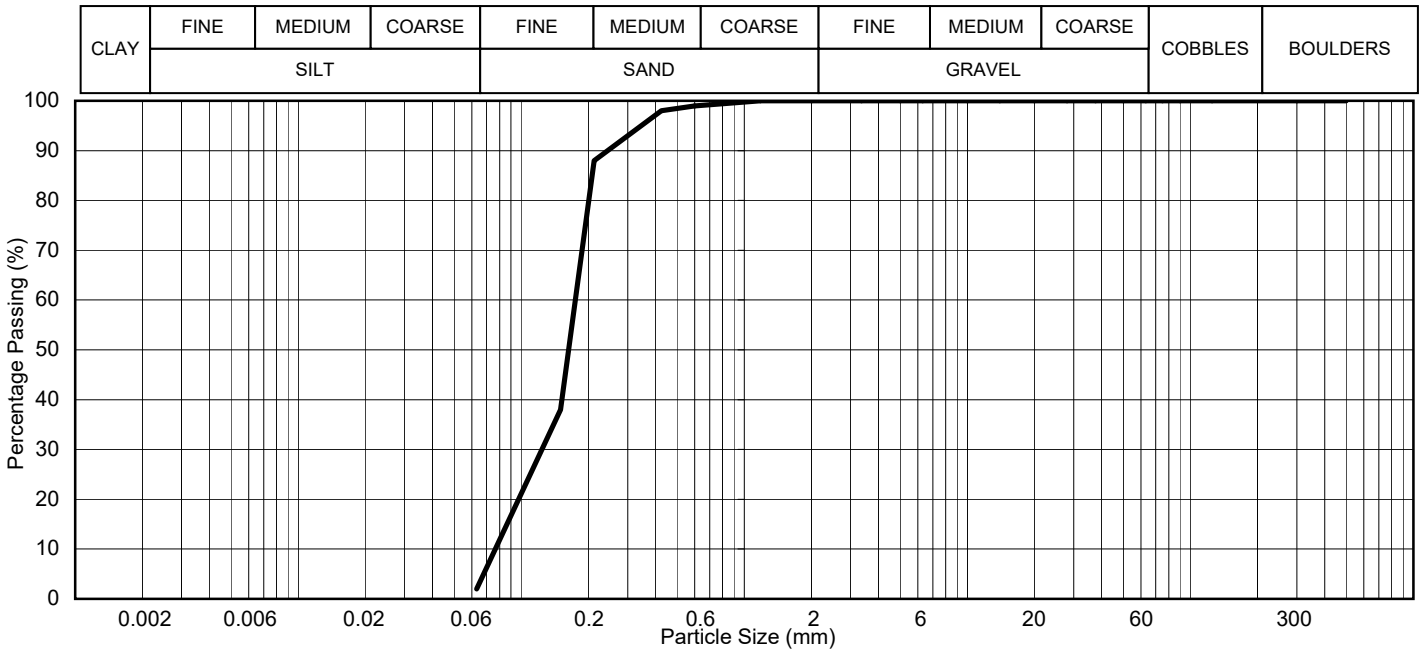
Borehole	G4
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-	**PERCENTAGE SOIL TYPES**	
6.30	100	-	-		
5.00	100	-	-		
3.35	100	-	-		
2.00	100	-	-		
1.18	100	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	99	-	-		
0.425	98	-	-		
0.300	93	-	-		
0.212	88	-	-		
0.150	38	-	-		
0.063	2	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	2	98	0	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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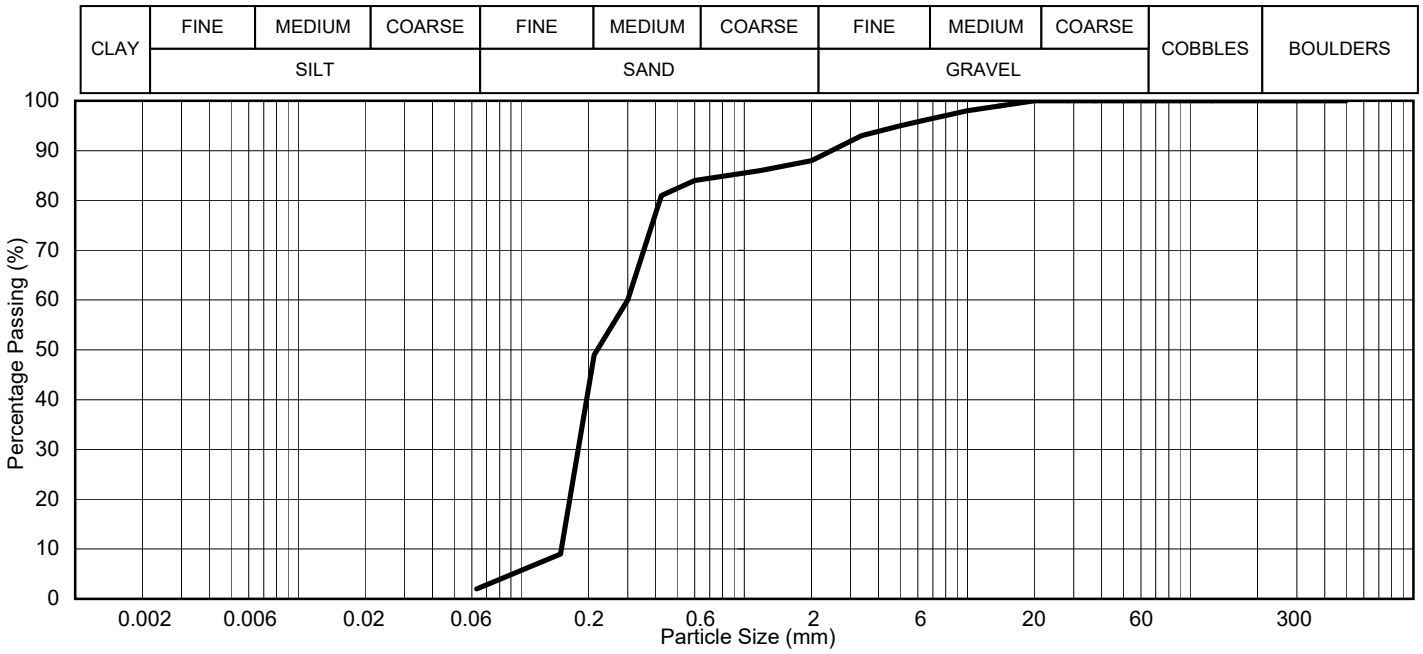
Borehole	G5
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	99	-	-		
10.0	98	-	-	**PERCENTAGE SOIL TYPES**	
6.30	96	-	-	**CLAY** / **SILT Ŧ** 2 / **SAND** 86 / **GRAVEL** 12 / **COBBLES** 0	
5.00	95	-	-		
3.35	93	-	-		
2.00	88	-	-		
1.18	86	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	84	-	-	**D10** - / **D60** - / **Specification**	
0.425	81	-	-		
0.300	60	-	-		
0.212	49	-	-	**UNIFORMITY COEFFICIENT** - / -	
0.150	9	-	-		
0.063	2	-	-		

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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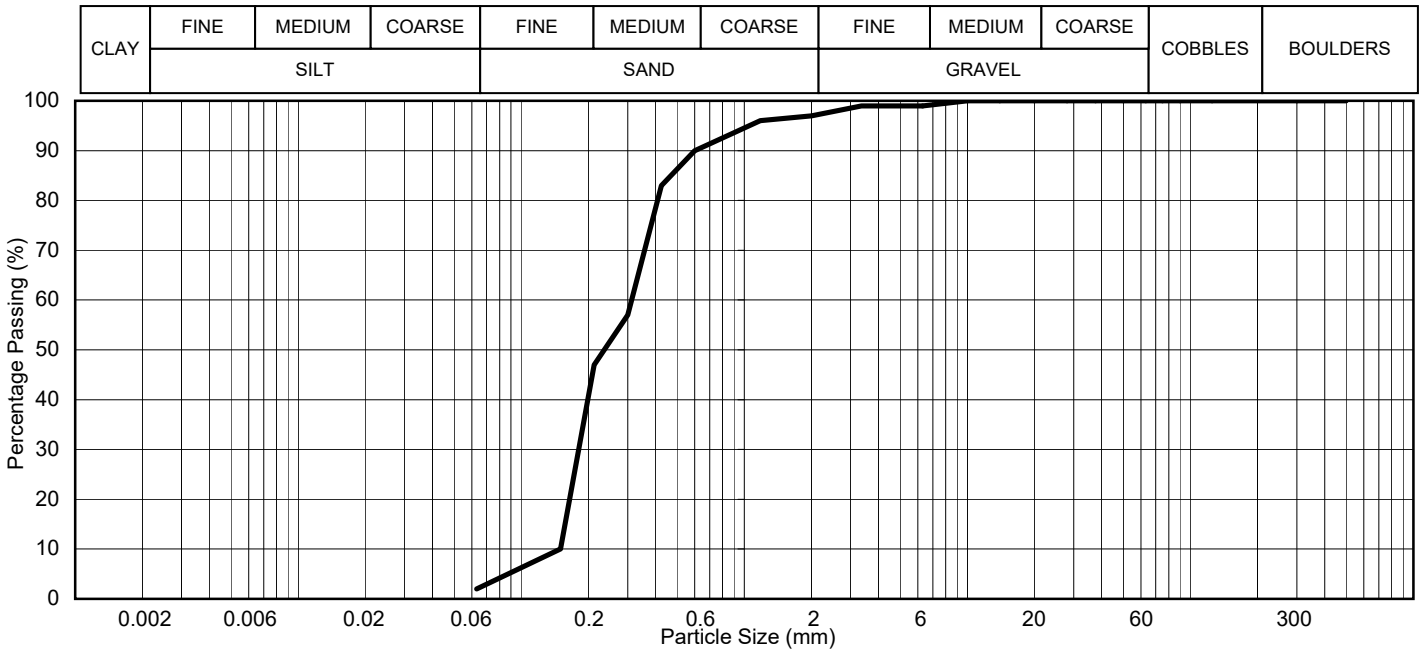
Borehole	G6
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-	**PERCENTAGE SOIL TYPES**	
6.30	99	-	-		
5.00	99	-	-		
3.35	99	-	-		
2.00	97	-	-		
1.18	96	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	90	-	-		
0.425	83	-	-		
0.300	57	-	-		
0.212	47	-	-		
0.150	10	-	-		
0.063	2	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	2	95	3	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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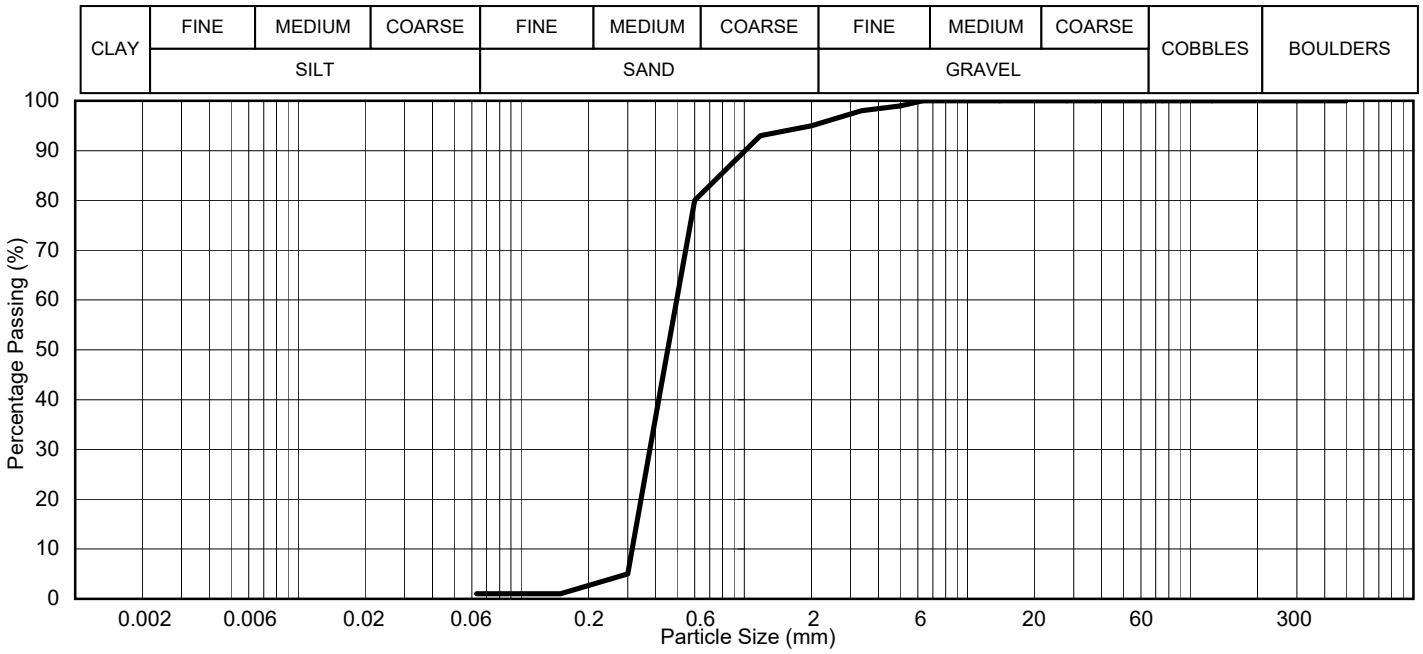
Borehole	G7
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-	**PERCENTAGE SOIL TYPES**	
6.30	100	-	-		
5.00	99	-	-		
3.35	98	-	-		
2.00	95	-	-		
1.18	93	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	80	-	-		
0.425	43	-	-		
0.300	5	-	-		
0.212	3	-	-		
0.150	1	-	-		
0.063	1	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	1	94	5	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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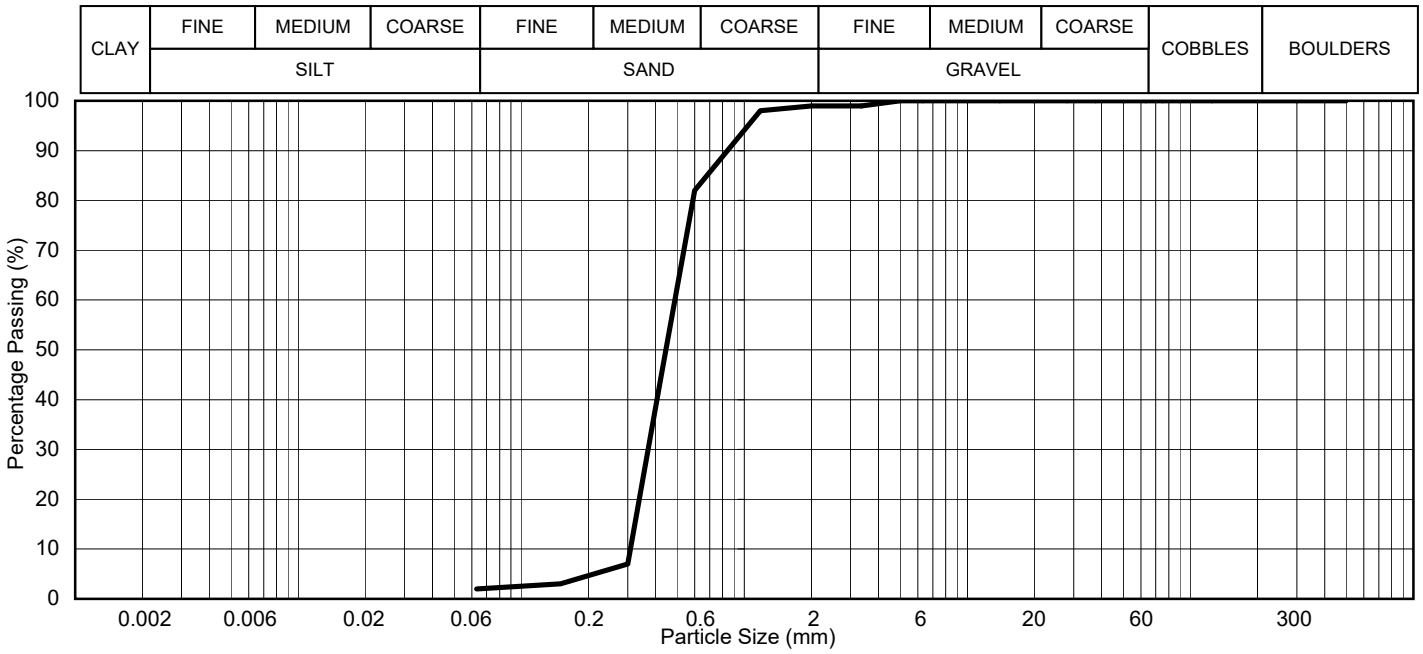
Borehole	G8
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-	**PERCENTAGE SOIL TYPES**	
6.30	100	-	-		
5.00	100	-	-		
3.35	99	-	-		
2.00	99	-	-		
1.18	98	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	82	-	-		
0.425	45	-	-		
0.300	7	-	-		
0.212	5	-	-		
0.150	3	-	-		
0.063	2	-	-		

CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	2	97	1	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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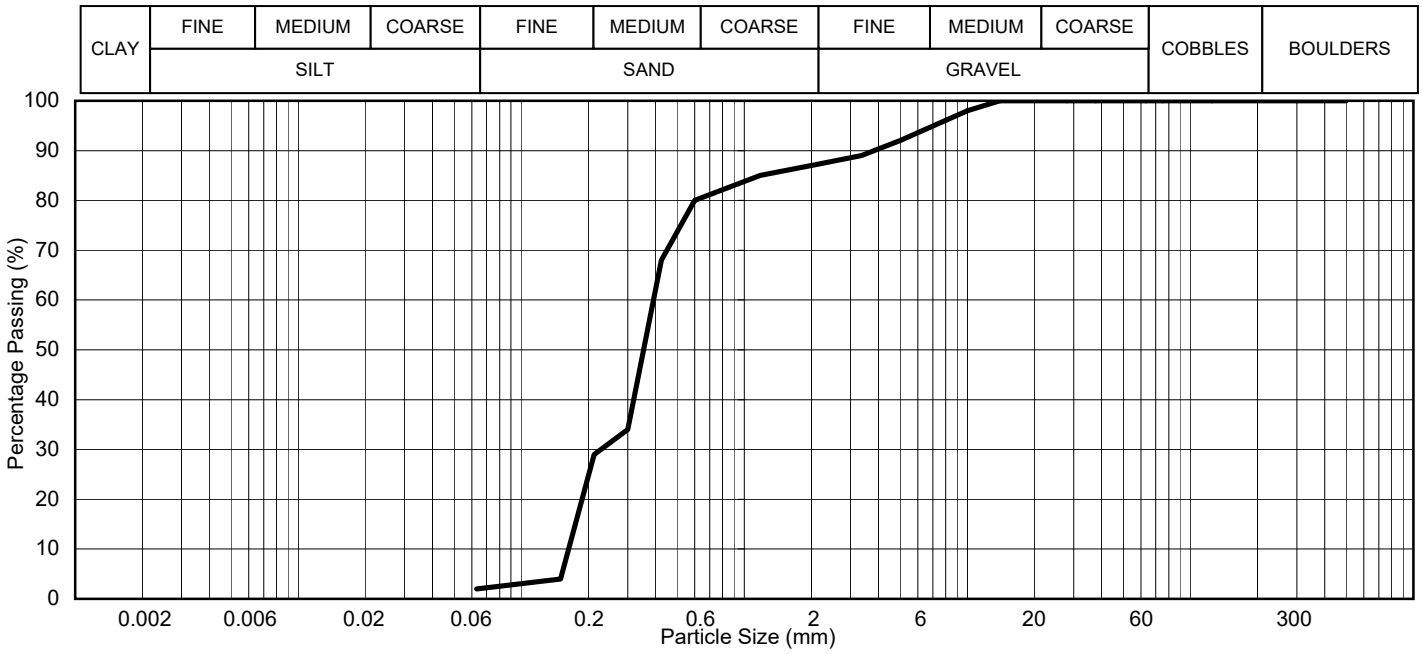
Borehole	G9
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	98	-	-	**PERCENTAGE SOIL TYPES**	
6.30	94	-	-		
5.00	92	-	-		
3.35	89	-	-		
2.00	87	-	-		
1.18	85	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	80	-	-		
0.425	68	-	-		
0.300	34	-	-		
0.212	29	-	-		
0.150	4	-	-		
0.063	2	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	2	85	13	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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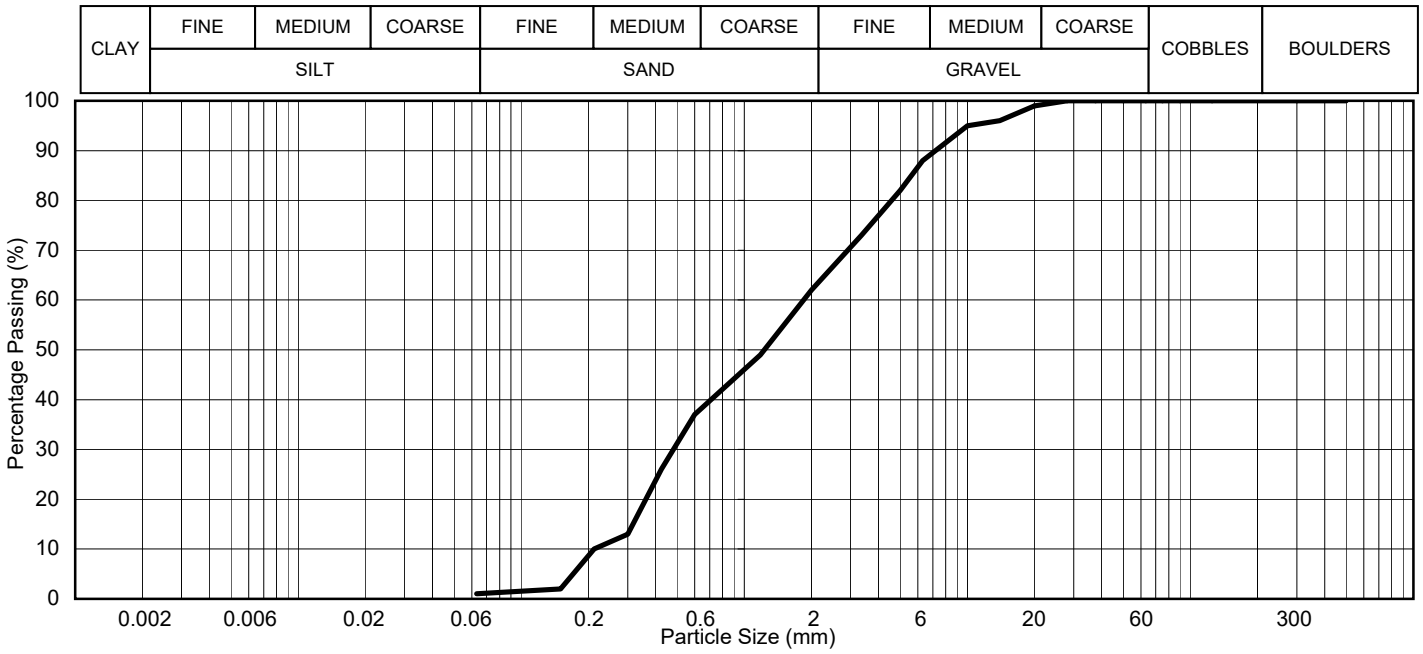
Borehole	G10
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	99	-	-		
14.0	96	-	-		
10.0	95	-	-	**PERCENTAGE SOIL TYPES**	
6.30	88	-	-		
5.00	82	-	-		
3.35	73	-	-		
2.00	62	-	-		
1.18	49	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	37	-	-		
0.425	26	-	-		
0.300	13	-	-		
0.212	10	-	-		
0.150	2	-	-		
0.063	1	-	-		

CLAY	SILT ₸	SAND	GRAVEL	COBBLES
/	1	61	38	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

₸ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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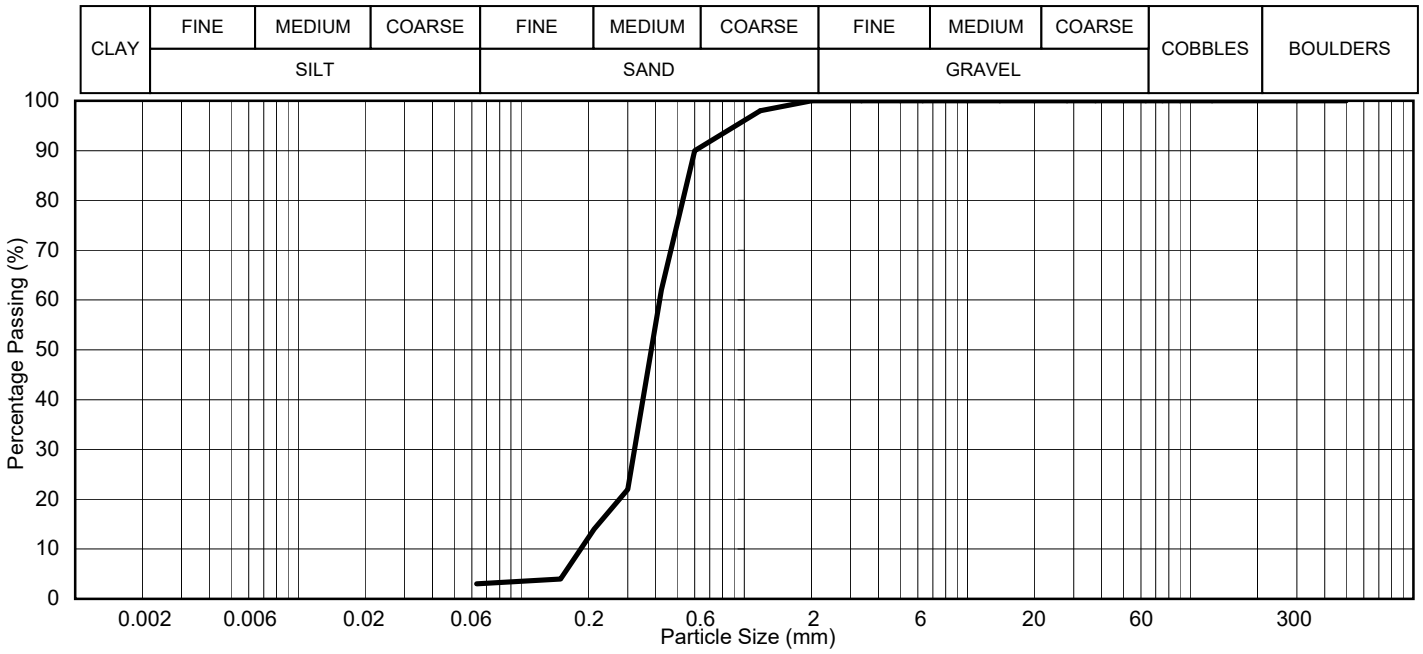
Borehole	G11
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-	**PERCENTAGE SOIL TYPES**	
6.30	100	-	-		
5.00	100	-	-		
3.35	100	-	-		
2.00	100	-	-		
1.18	98	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	90	-	-		
0.425	62	-	-		
0.300	22	-	-		
0.212	14	-	-		
0.150	4	-	-		
0.063	3	-	-		

CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	3	97	0	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

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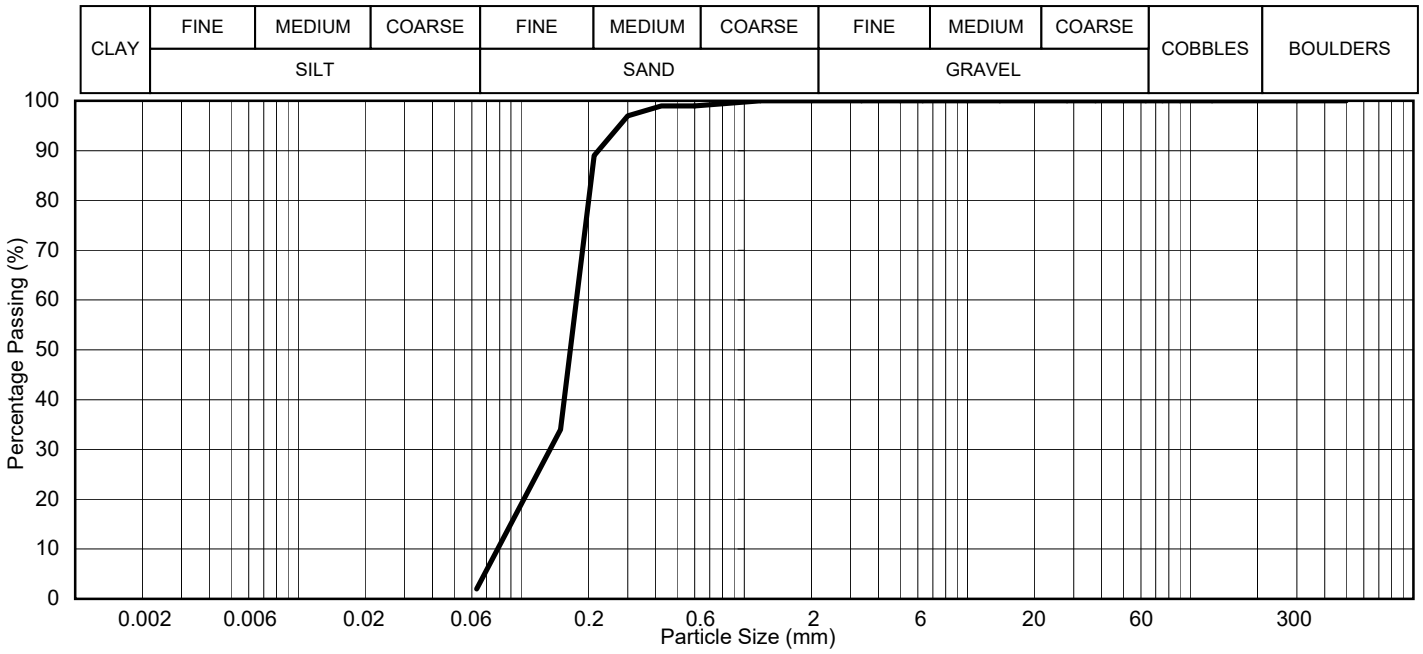
Borehole	G12
Sample	B1
Depth (m)	0.00-0.15



SIEVING				SEDIMENTATION	
Sieve Size (mm)	Percentage Passing (%)	Specification Not Applicable		Particle Size (mm)	Percentage Passing (%)
		Lower %	Upper %		
500.0	100	-	-	0.020	
300.0	100	-	-	0.006	
125.0	100	-	-	0.002	
90.0	100	-	-		
75.0	100	-	-	**GRADING CLASSIFICATION (SHW TABLE 6/2)**	
63.0	100	-	-	-	
50.0	100	-	-		
37.5	100	-	-	Grading classification proves the material has met the relevant grading requirements only. Further testing may be required to assess compliance with SHW.	
28.0	100	-	-		
20.0	100	-	-		
14.0	100	-	-		
10.0	100	-	-	**PERCENTAGE SOIL TYPES**	
6.30	100	-	-		
5.00	100	-	-		
3.35	100	-	-		
2.00	100	-	-		
1.18	100	-	-	**UNIFORMITY COEFFICIENT (SHW TABLE 6/1 NOTE 5)**	
0.600	99	-	-		
0.425	99	-	-		
0.300	97	-	-		
0.212	89	-	-		
0.150	34	-	-		
0.063	2	-	-		

CLAY	SILT Ŧ	SAND	GRAVEL	COBBLES
/	2	98	0	0

D10	D60	Specification
-	-	
UNIFORMITY COEFFICIENT	-	-

Remarks

Ŧ Where a sedimentation test was not carried out, this figure represents total fines, i.e., particles of diameter less than 63 microns

SIEVE ANALYSIS - BS 1377 : Part 2 : 1990 : CLAUSE 9.2

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID	**MAR00820**	
Issue Version	1	
Customer	Structural Soils Ltd, 65 Sussex Street, Glasgow, G41 1DX	
Customer Reference	Iona & Fionnphort	
Date Sampled	04-05/11/2020	
Date Received	09-Nov-20	
Date Reported	30-Nov-20	
Condition of samples	Cold	Satisfactory

<Redacted>

Authorised by:	Marya Hubbard
Position:	Laboratory Manager

Any additional opinions or interpretations found in this report, are outside the scope of UKAS accreditation.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR00820
Issue Version	1
Customer Reference	Iona & Fionnphort

		Units	%	%	%	%	%	Mg/m3
		Method No	ASC/SOP/303	ASC/SOP/303	SUB_01*	SUB_01*	SUB_01*	SOCOTEC Doncaster*
		Limit of Detection	0.2	0.2	N/A	N/A	N/A	N/A
		Accreditation	UKAS	UKAS	N	N	N	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Total Moisture @ 120°C**	**Total Solids**	**Gravel (>2mm)**	**Sand (63-2000 µm)**	**Silt (<63 µm)**	**Particle Density**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	26.8	73.2	0.0	99.7	0.3	2.73
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	21.0	79.0	15.7	83.3	1.0	2.69
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	30.3	69.7	0.0	99.2	0.8	2.73
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	23.7	76.3	50.0	48.9	1.2	2.74
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	25.9	74.1	0.8	98.1	1.1	2.74
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	21.5	78.5	25.3	73.1	1.6	2.74
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	24.4	75.6	0.0	98.9	1.1	2.69
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	25.9	74.1	2.9	93.3	3.8	2.63
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	23.6	76.4	10.8	88.0	1.1	2.75
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	20.9	79.1	36.8	61.5	1.7	2.70
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	24.8	75.2	0.0	99.0	1.0	2.69
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	22.4	77.6	0.0	98.5	1.5	2.73
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	24.1	75.9	0.0	98.2	1.8	2.71
Reference Material (% Recovery)			N/A	N/A	N/A	N/A	N/A	N/A
QC Blank			N/A	N/A	N/A	N/A	N/A	N/A

* See Report Notes

NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

		Units	N/A	% M/M
		Method No	SUB_02*	SOCOTEC Env Chem*
		Limit of Detection	N/A	0.02
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Asbestos**	**TOC**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	NAIIS	0.29
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	NAIIS	0.19
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	NAIIS	0.24
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	NAIIS	0.09
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	NAIIS	0.26
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	NAIIS	0.21
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	NAIIS	0.24
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	NAIIS	0.26
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	NAIIS	0.21
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	NAIIS	0.13
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	NAIIS	0.20
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	NAIIS	0.16
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	NAIIS	0.18
		Reference Material (% Recovery)	N/A	99
		QC Blank	N/A	<0.02

* See Report Notes
NAIIS - No Asbestos Identified In Sample

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

		Units	mg/Kg (Dry Weight)							
		Method No	SOCOTEC Env Chem*							
		Limit of Detection	0.5	0.04	0.5	0.5	0.01	0.5	0.5	2
		Accreditation	UKAS	UKAS	UKAS	UKAS	N	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Arsenic**	**Cadmium**	**Chromium**	**Copper**	**Mercury**	**Nickel**	**Lead**	**Zinc**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	3.1	0.11	7.7	8.0	0.03	6.2	4.9	27.7
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	2.1	0.09	4.2	5.3	0.01	4.3	2.7	6.6
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	1.5	0.12	5.3	4.5	0.01	5.1	2.8	8.4
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	1.7	0.09	8.4	6.6	<0.01	7.9	3.0	11.4
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	2.1	0.13	4.9	6.2	0.03	5.0	2.8	4.9
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	4.5	0.16	6.2	5.8	0.05	6.7	4.2	18.7
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	1.3	0.14	4.5	4.4	0.06	4.6	2.7	4.7
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	1.2	0.20	5.2	4.5	0.04	5.2	4.4	11.8
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	1.2	0.14	4.9	5.2	0.02	5.3	2.9	9.4
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	2.0	0.18	8.9	13.1	0.02	13.4	3.5	18.4
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	1.3	0.14	7.6	6.2	0.02	6.3	2.6	10.4
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	0.9	0.15	7.9	4.9	0.03	6.1	3.1	12.8
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	1.1	0.17	7.4	5.0	0.03	5.8	4.2	11.2
Certified Reference Material SETOC 774 (% Recovery)			100	110	105	107	103	103	101	103
QC Blank			<0.5	<0.04	<0.5	<0.5	<0.01	<0.5	<0.5	<2

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR00820
Issue Version	1
Customer Reference	Iona & Fionnphort

		Units	µg/Kg (Dry Weight)	
		Method No	ASC/SOP/301	
		Limit of Detection	1	1
		Accreditation	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**Dibutyltin (DBT)**	**Tributyltin (TBT)**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	<5	7.00
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	<5	6.81
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	<5	11.3
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	<5	<5
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	<5	<5
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	<5	<5
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	<5	<5
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	<5	7.18
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	<5	<5
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	<5	<5
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	<5	<5
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	<5	<5
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	<5	8.32
Certified Reference Material BCR-646 (% Recovery)			80	72
QC Blank			<1	<1

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**ACENAPTH**	**ACENAPHY**	**ANTHRACN**	**BAA**	**BAP**	**BBF**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	<1	<1	<1	<1	<1	<1
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	<1	<1	<1	<1	<1	<1
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	<1	<1	<1	<1	<1	<1
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	<1	<1	<1	<1	<1	<1
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	<1	<1	<1	<1	<1	<1
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	<1	<1	<1	<1	<1	1.20
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	<1	<1	<1	<1	<1	<1
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	<1	<1	<1	1.03	1.47	1.92
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	<1	<1	1.52	1.50	<1	1.15
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	<1	<1	<1	<1	<1	<1
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	<1	<1	<1	<1	<1	<1
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	<1	<1	<1	<1	<1	<1
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	<1	<1	<1	<1	<1	1.21
Certified Reference Material QPH098MS (% Recovery)			100	120	110	110	98	100
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304
		Limit of Detection	1	1	1	1	1	1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**BENZGHIP**	**BKF**	**CHRYSENE**	**DBENZAH**	**FLUORANT**	**FLUORENE**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	<1	<1	<1	<1	<1	<1
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	<1	<1	<1	<1	<1	<1
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	<1	<1	<1	<1	<1	<1
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	<1	<1	<1	<1	<1	<1
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	<1	<1	<1	<1	<1	<1
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	<1	<1	<1	<1	1.78	<1
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	<1	<1	<1	<1	<1	<1
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	1.70	<1	1.44	<1	1.17	<1
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	1.25	<1	1.83	<1	2.02	<1
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	<1	<1	<1	<1	<1	<1
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	<1	<1	<1	<1	<1	<1
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	<1	<1	<1	<1	<1	<1
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	<1	<1	<1	<1	1.16	<1
Certified Reference Material QPH098MS (% Recovery)			90	85	110	98	100	120
QC Blank			<1	<1	<1	<1	<1	<1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.
As the method uses surrogate standards to correct for losses, the RM results are reported as percentage trueness, not recovery.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/304	ASC/SOP/303/306
		Limit of Detection	1	1	1	1	100
		Accreditation	UKAS	UKAS	UKAS	UKAS	N
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**INDPYR**	**NAPTH**	**PHENANT**	**PYRENE**	**THC**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	<1	<1	<1	<1	6630
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	<1	<1	<1	<1	988
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	<1	<1	<1	<1	2630
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	<1	<1	<1	<1	1360
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	<1	<1	<1	<1	6100
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	<1	<1	2.60	2.68	4600
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	<1	<1	<1	<1	2660
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	1.46	<1	1.53	2.37	5720
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	<1	<1	1.37	2.60	3090
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	<1	<1	<1	1.16	1510
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	<1	<1	<1	<1	2750
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	<1	<1	<1	<1	1690
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	<1	<1	1.59	1.89	3040
Certified Reference Material QPH098MS (% Recovery)			74	96	99	100	102~
QC Blank			<1	<1	<1	<1	<100

For full analyte name see method summaries
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Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.08	0.08	0.08	0.08	0.08	0.08	0.08
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**PCB28**	**PCB52**	**PCB101**	**PCB118**	**PCB138**	**PCB153**	**PCB180**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	0.09	0.09	<0.08	<0.08	<0.08	<0.08	<0.08
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08
Certified Reference Material QOR136 MS (% Recovery)			105	107	99	94	99	122	69
QC Blank			<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

		Units	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)	µg/Kg (Dry Weight)
		Method No	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302	ASC/SOP/302
		Limit of Detection	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
		Accreditation	UKAS	UKAS	UKAS	UKAS	UKAS	UKAS	N*	UKAS
Client Reference:	**SOCOTEC Ref:**	**Matrix**	**AHCH**	**BHCH**	**GHCH**	**DIELDRIN**	**HCB**	**DDE**	**DDT**	**DDD**
BHF1 ES101 0.00-0.15m	MAR00820.001	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHF1 ES102 0.15-0.50m	MAR00820.002	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHF2 ES101 0.00-0.15m	MAR00820.003	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHF2 ES102 0.20-0.58m	MAR00820.004	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHF3 ES101 0.00-0.15m	MAR00820.005	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHF3 ES102 0.15-0.55m	MAR00820.006	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHI1 ES101 0.00-0.15m	MAR00820.007	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHI1 ES102 0.20-0.70m	MAR00820.008	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHI2 ES101 0.00-0.15m	MAR00820.009	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHI2 ES102 0.15-0.45m	MAR00820.010	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHI3 ES101 0.00-0.15m	MAR00820.011	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHI3 ES102 0.15-0.40m	MAR00820.012	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BHI3 ES103 0.40-0.65m	MAR00820.013	Sediment	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Certified Reference Material QOR136 MS (% Recovery)			96~	86~	88~	92~	64	96	138	75
QC Blank			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

For full analyte name see method summaries
~ Indicates result is for an In-house Reference Material as no Certified Reference Materials are avaliable.

* See Report Notes

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID MAR00820
Issue Version 1
Customer Reference Iona & Fionnphort

REPORT NOTES

Method Code	Sample ID	The following information should be taken into consideration when using the data contained within this report
SOCOTEC Env Chem*	MAR00820.001-013	Analysis was conducted by an internal SOCOTEC laboratory. UKAS accredited analysis by this laboratory is under UKAS number 1252.
SOCOTEC Doncaster*	MAR00820.001-013	Analysis was conducted by an internal SOCOTEC laboratory.
SUB_01*	MAR00820.001-013	Analysis was conducted by an approved subcontracted laboratory.
SUB_02*	MAR00820.001-013	Analysis was conducted by an approved subcontracted laboratory.
ASC/SOP/301	MAR00820.001-013	The matrix of this sample has been found to interfere with the result for this test. The sample has therefore been diluted, but in doing so, the detection limit for this test has been elevated.
ASC/SOP/302	MAR00820.001-013	One of the Primary process control data associated with this Test has not wholly met the requirements of the Laboratory Quality Management System QMS with DDT falling outside acceptable limits. DDT is a known problem compound that can breakdown into DDD and DDE .These circumstances should be taken into consideration when utilising the data and in line with our QMS policy we have removed accreditation, where applicable.
ASC/SOP/303/304	MAR00820.008-009	Chrysene is known to coelute with Triphenylene and these peaks can not be resolved. It is believed Triphenylene is present in these samples therefore it is suggested that the Chrysene results should be taken as a Chrysene (inc. Triphenylene).This should be taken into consideration when utilising the data.

DEVIATING SAMPLE STATEMENT

Deviation Code	Deviation Definition	Sample ID	Deviation Details. The following information should be taken into consideration when using the data contained within this report
D1	Holding Time Exceeded	N/A	N/A
D2	Handling Time Exceeded	N/A	**N/A**
D3	Sample Contaminated through Damaged Packaging	N/A	N/A
D4	Sample Contaminated through Sampling	N/A	N/A
D5	Inappropriate Container/Packaging	N/A	N/A
D6	Damaged in Transit	N/A	N/A
D7	Insufficient Quantity of Sample	N/A	N/A
D8	Inappropriate Headspace	N/A	N/A
D9	Retained at Incorrect Temperature	N/A	N/A
D10	Lack of Date & Time of Sampling	N/A	N/A
D11	Insufficient Sample Details	N/A	N/A
D12	Sample integrity compromised or not suitable for analysis	N/A	N/A

Certificate of Analysis

Issuing Laboratory SOCOTEC, Marine Department, Specialist Chemistry, Etwall House, Bretby Business Park, Ashby Road, Bretby, Burton-upon-Trent DE15 0YZ

Test Report ID	MAR00820
Issue Version	1
Customer Reference	Iona & Fionnphort

Method	Sample and Fraction Size	Method Summary
Total Solids	Wet Sediment	Calculation (100%-Moisture Content).Moisture content determined by drying a portion of the sample at 120°C to constant weight.
Particle Size Analysis	Wet Sediment	Wet and dry sieving followed by laser diffraction analysis.
Total Organic Carbon (TOC)	Wet Sediment	Carbonate removal and sulphurous acid/combustion at 1600°C/NDIR.
Metals	Air dried and seived to <63µm	Aqua-regia extraction followed by ICP analysis.
Organotins	Wet Sediment	Solvent extraction and derivatisation followed by GC-MS analysis.
Polyaromatic Hydrocarbons (PAH)	Wet Sediment	Solvent extraction and clean up followed by GC-MS analysis.
Total Hydrocarbon Content (THC)	Wet Sediment	Solvent extraction and clean up followed by GC-FID analysis.
Polychlorinated Biphenyls (PCBs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.
Organochlorine Pesticides (OCPs)	Air dried and seived to <2mm	Solvent extraction and clean up followed by GC-MS-MS analysis.

Analyte Definitions					
Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name	Analyte Abbreviation	Full Analyte name
ACENAPTH	Acenaphthene	C2N	C2-naphthalenes	THC	Total Hydrocarbon Content
ACENAPHY	Acenaphthylene	C3N	C3-naphthalenes	AHCH	alpha-Hexachlorcyclohexane
ANTHRACN	Anthracene	CHRYSENE	Chrysene	BHCH	beta-Hexachlorcyclohexane
BAA	Benzo[a]anthracene	DBENZAH	Dibenzo[ah]anthracene	GHCH	gamma-Hexachlorcyclohexane
BAP	Benzo[a]pyrene	FLUORANT	Fluoranthene	DIELDRIN	Dieldrin
BBF	Benzo[b]fluoranthene	FLUORENE	Fluorene	HCB	Hexachlorobenzene
BEP	Benzo[e]pyrene	INDPYR	Indeno[1,2,3-cd]pyrene	DDD	p,p'-Dichorodiphenyldichloroethane
BENZGHIP	Benzo[ghi]perylene	NAPTH	Naphthalene	DDE	p,p'-Dichorodiphenyldicloroethylene
BKF	Benzo[k]fluoranthene	PERYLENE	Perylene	DDT	p,p'-Dichorodiphenyltrichloroethane
C1N	C1-naphthalenes	PHENANT	Phenanthrene		
C1PHEN	C1-phenanthrene	PYRENE	Pyrene		