CONTENTS

APPENDICES

FOREWORD

The following Conditions and Notes on Site Investigation Procedures should be read in conjunction with this report.

General.

Recommendations made, and opinions expressed in the report are based on the strata observed in the exploratory holes, together with the results of in-situ and laboratory tests. No responsibility can be held for conditions which have not been revealed by exploratory work, or which occur between exploratory hole locations. Whilst the report may suggest the likely configuration of strata, both between exploratory hole locations, or below the maximum depth of the investigation, this is only indicative, and liability cannot be accepted for its accuracy.

Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction below or close to the site.

Boring Procedures.

Unless otherwise stated, the 'Shell and Auger' technique of soft ground boring has been employed. All boring operations sampling and/or logging of soils and in-situ testing complies with the recommendations of the British Standard Code of Practice BS 5930 (1981), 'Site Investigation' and BS 1377:1990, 'Methods of test for soils for civil engineering purposes'.

Whilst the technique allows the maximum data to be obtained in soft ground, some disturbance and variation of soft and layered soils is unavoidable. Attention is drawn to this condition, whenever it is suspected. Where cobbles and boulders are recorded, no conclusion should be drawn concerning the size, presence, lithological nature, or numbers per unit volume of ground.

Where peat has been encountered during siteworks, samples have been logged in accordance with the Von Post Classification (ref. Von Post, L. 1992. Sveriges Gologiska Undersoknings torvinventering och nogra av dess hittils vunna resultat (SGU peat inventory and some preliminary results) Svenska Mosskulturforeningens Tidskrift, Jonkoping, Swedden, 36, 1-37 & Hobbs N. B. Mire morphology and the properties of some British and foreign peats. QJEG, Vol. 19, 1986).

Routine Sampling.

Undisturbed samples of soils, predominantly cohesive in nature are obtained unless otherwise stated by a 104mm diameter open-drive tube sampler. In granular soils, and where undisturbed sampling is inappropriate, disturbed samples are collected. Smaller disturbed samples are also recovered at intervals to allow a visual examination of the full strata section.

In-Situ Testing.

Standard penetration tests, utilising either the standard split spoon sampler or solid cone and automatic trip-hammer are conducted unless otherwise where required by instruction. Subsequent to a seating drive of 150mm, a summation for the number of blows for 300mm penetration is recorded on the boring records together with the blow count for each 75mm penetration. In cases where incomplete penetration is obtained, the number of blows for the recorded value of penetration are noted. In coarse granular soils, a cone end is fitted to the sampler and a similar procedure adopted.

Groundwater.

The depth of entry of any influx of groundwater is recorded during the course of boring operations. However, the normal rate of boring does not usually permit the recording of an equilibrium level for any one water strike. Where possible drilling is suspended for a period of twenty minutes to monitor the subsequent rise in water level.

Groundwater conditions observed in the borings or pits are those appertaining to the period of investigation. It should be noted however, that groundwater levels are subject to diurnal, seasonal and climatic variations and can also be affected by drainage condition, tidal variation or other causes.

Retention of Samples.

After satisfactory completion of all the scheduled laboratory tests on any sample, the remaining material is discarded unless a period of retention of samples is agreed, it is our normal practice to discard all soil samples one month after submission of our final report.

REPORT ON A SITE INVESTIGATION
FOR A HOUSING DEVELOPMENT
AT SCHOLARSTOWN ROAD
RATHFARNHAM
DUBLIN

DBFL CONSULTING ENGINEERS

Report No. 21167 **OCTOBER 2017**

I Introduction

A major residential development is planned for a greenfield site located at Scholarstown Road in Rathfarnham, Co. Dublin.

A comprehensive investigation of sub soil conditions in the area of development has been ordered by DBFL Consulting Engineers on behalf of their client.

The programme of the field investigation included the construction of boreholes, trial pits and dynamic probes to establish geotechnical criteria on which to base foundation and infra-structural design. Work was carried out in accordance with BS 5930, Code of Practice for Site Investigations (1999) and Eurocode 7.

In addition plate bearing tests were scheduled to determine in situ CBR values while soakaway testing was performed in accordance with BRE Digest 365.

A programme of laboratory testing to confirm geotechnical and environmental soil parameters followed site operations.

This report includes all factual data pertaining to the project and comments on the findings relative to foundation and infrastructural design.

II Fieldwork

The site is a green field one located off the Scholarstown Road, in the lands surrounding Beechpark House. The site fronts on to the main road to the south and is bounded by existing residential developments on the remaining sides. The location is noted on the Google Map in Appendix VII. Exploratory locations are shown on detailed drawings also contained in this Appendix. Details on these plan have been provided by DBFL.

Each location was electronically scanned to ensure that services were not disrupted. At borehole locations a trial pit was opened by hand to a depth of 1.20 metres to confirm this. All exploratory locations have been referenced to National Grid and OD levels established.

The scope of the field investigation included the following elements:

* 3 nr. Conventional Boreholes .
* 15 nr. Machine Excavated Trial Pits
* 15 nr. Plate Bearing Tests (In Situ CBR)
* 30 nr. H.D. Dynamic Probes
* 6 nr. Percolation Tests to BRE Digest 365

Following the field operations samples were selected for laboratory analysis. This included standard geotechnical testing and detailed environmental analysis carried out by specialist laboratory.

a.Boreholes

The three exploratory holes were bored with conventional 200mm cable-tool methods using a Dando Exploratory Rig..

Detailed geotechnical records are contained in Appendix I to this report - the records give details of stratification, sampling, in-situ testing and groundwater. Note is also taken of any obstructions to normal boring requiring the use of the heavy chisel for advancement.

The records uniformly note surface topsoil overlying a thin stratum of firm brown sandy gravelly CLAY. Below approximately 1.00 metres the brown gravelly CLAY becomes stiff in consistency, becoming very stiff below about 3.00 metres. Boreholes were terminated at depths between 6.00 and 6.60 metres when further advancement was impractical.

The gravelly clay stratum is a glacial till, locally referred to as brown boulder clay and very typical of the area. The stratum contains random cobble and boulder material.

Ground water was not encountered during the course of the investigation. Long-term ground water observation was not required.

b. Trial Pits

Trial pits were opened at fifteen locations using a JCB excavator under geotechnical engineering supervision. Samples were recovered at intervals, ground water was noted where relevant and detailed trial pit records prepared. These records are contained in Appendix II to this report with accompanying photographs.

The trial pitting operation revealed a very consistent stratification pattern with topsoil overlying brown gravelly CLAY, initially firm in consistency but becoming stiffer below about 1.00 metres

Two trial pits however varied from the general pattern. TP03 and TP05 encountered FILL or made ground material extending from surface to 1.70 metres at TP03 and to 2.30 metres BGL at TP05. The FILL consists of brown boulder clay with brick and rubble including ceramic tiles.

In both locations firm to stiff brown gravelly CLAY was noted below the FILL and pits were terminated in this stratum.

All trial pits were dry and remained very stable. Some difficulty in excavation in the lower very stiff to hard boulder clay was experienced and trial pits were terminated generally between 2.50 and 2.80 metres.

c. Plate Bearing Tests

In situ CBR values were established by Plate Bearing Test at fifteen specified locations. Testing was carried out directly below the topsoil /organic zone at a depth of 0.40 metres.

A 450mm diameter steel plate is loaded incrementally and deflection is recorded. The plate is then off loaded and recovery recorded (Load Cycle). The process is then repeated (Re-Load Cycle).

The equivalent CBR value is then calculated for both cycles. Detailed results are presented in Appendix III and the data is summarised in the following Table A.

TABLE A

Test No.	CBR at Load Cycle (%)	CBR at RE-Load (%)
01	5.2	6.2
02	6.4	13.8
03	8.9	21.2
04	7.7	16.4
05	8.7	17.7
06	7.9	20.6
07	16.8	118.2
08	6.4	21.5
09	14.6	33.9
10	8.1	22.4
11	5.9	13.5
12	14.0	34.9
13	10.7	19.2
14	3.5	7.2
15	18.1	41.3
AVERAGE	8.6	20.7

The average value on reload excludes the very high result from PBT 07 which may be due to a boulder obstruction at the plate test location.

d. Dynamic Probes

Probing was carried out at thirty locations to establish a pattern of soil strength with depth. Probing was in accordance with the heavy-duty probe specification of BS 1377: Part 9: 1990. In these tests, the soil resistance is measured in terms of the number of drop-hammer blows required to drive the test probe through each 100 mm increment of penetration. Probing is terminated when the blow count exceeds 25/100mm to avoid damage to the apparatus. Where loose material is present a single blow count may drive the apparatus in excess of 100mm. In this instance blow counts of zero may be recorded.

Results are presented both numerically and graphically in Appendix IV.

The probes generally encountered stiff soils at relatively shallow depth. A Dynamic Probe resistance of $N_{100} = 5$, with no dramatic reduction in underlying strength is indicative of soils suitable for foundation for traditional two storey housing.

Some anomalies to the general pattern were noted as follows:

Probe No.	Soft Soils ($N_{100} < 3$)	Stiff Soils ($N100 > 5$)
DP06	0.70 – 2.20	2.20 – 3.20
DP08	0.80 – 1.30	1.40 – 2.30
DP20	0.80 – 1.00	1.00 – 1.60
DP23	1.00 – 2.10	2.20 – 3.10
DP29	0.90 – 1.20	1.30 – 2.70

e. BRE Digest 365 Soakaway

A total of six percolation tests were carried out as noted on the site plans.

Infiltration testing was performed in accordance with BRE Digest 365 'Soakaway Design'. To obtain a measure of the infiltration rate of the sub-soils, water is poured into the test pit, and records taken of the fall in water level against time. This operation is generally performed over two cycles of soakage and dispersion following initial soakage.

The infiltration rate is the volume of water dispersed per unit exposed area per unit of time, and is generally expressed as metres/minute or metres/second. In these calculations the exposed area is the sum of the base area and the average internal area of the pit sides over the test duration.

Records for each test are presented in Appendix V. The stratification and water table in each test pit is noted and the records of water level with time are recorded.

Designs are based on the slowest infiltration rate, which is generally calculated from the final cycle. The infiltration rate (f) is calculated and the results for the individual tests are noted on the record sheets.

Results confirm that little or no percolation is available in the cohesive boulder clays encountered on this site. The percolation characteristics are typical of the regional boulder clay deposition

III Testing

(a) In-Situ :

Standard penetration tests were carried out at approximate 1.00 metre intervals in the geotechnical boreholes to measure relative in-situ soil strength. N values are noted in the right hand column of the boring records, representing the blow count required to drive the standard sampler 300mm into the soil, following initial seating blows. Where full test penetration was not achieved the blow count for a specific penetration is recorded, or refusal is indicated where appropriate

The results of the tests are summarised as follows:

STRATUM	N VALUE RANGE	COMMENT
Brown gravelly CLAY (Boulder Clay)		
1.00m BGL	19 to 40	Stiff to Very Stiff
2.00m BGL	21 to 26	Stiff
3.00m BGL	25 to 34	Stiff
4.00m BGL	27 to 34	Stiff
5.00m BGL	29 to 56	Very Stiff to Hard
6.00m BGL	36 to 57	Very Stiff to Hard

(b) Geotechnical Laboratory :

All samples from the boreholes and trial pits have been returned to the IGSL laboratory for initial visual inspection, a schedule of testing was prepared and tests as appropriate carried out.

Geotechnical testing was carried out by IGSL in it's INAB accredited facility. Chemical and environmental testing was carried out by CHEMTEST Limited in their UKAS laboratory. The programme of testing included the following elements and all results are presented in Appendix VI.

a. Moisture Content and Classification (Liquid and Plastic Limits)
b. Particle size distribution (Sieve Analysis / Hydrometer)
c. Sulphate and pH determination.
d. RILTA Environmental Suite

Classification / M.C.

The liquid and plastic limits were established for several samples of the glacial till or boulder clay. Results generally fall into the CL Zone of the standard classification indicative of low plasticity clay matrix material. In two samples a silt matrix has been established. These minor variations are very typical of the glacial till stratum.

Moisture contents are in the range 8 to 14 %, again very normal for these glacial soils.

Grading

PSD curves were established by wet sieve and hydrometer analysis. The grading for the boulder clay is typically straight line, reflecting the heterogeneous nature of the stratum, with particle distribution from the clay to the gravel fraction. One sample from TP03 grades as a clay bound sandy GRAVEL, this variation is again typical of the regional glacial till.

Sulphate and pH.

Three samples were selected for sulphate and pH analysis. Sulphate concentrations (SO_4 2:1 extract) of < 0.010 g/l were established with an average pH of 8.45. No special precautions are necessary to protect foundation concrete from sulphate aggression. A sulphate design class of DS-1 (ACEC Classification for Concrete) is indicated for concentrations less than 0.5 g/l.

Environmental

Five samples were submitted for detailed environmental analysis to RILTA (WAC) parameters. The results indicate that the material is essentially INERT with little or no elevated contaminant levels recorded. Material excavated from this site can be readily disposed of to a licensed landfill facility or used within the site and no problems are anticipated with safety of personnel operating on the site.

No asbestos was noted during routine asbestos screening.

IV Discussion

The proposed development is for traditional housing on a site located on Scholarstown Road in Rathfarnham.

The area is a greenfield one, bounded on three sides by existing housing developments.

A comprehensive investigation of ground conditions has been carried out on the instructions of DBFL involving Borehole and Trial Pit investigation with supporting Dynamic Probes, Plate Bearing Tests and Percolation Tests.

Summary Stratification

The investigation has confirmed that firm to stiff brown boulder CLAY is present at shallow depth over most of the site area. MADE ground was noted up to a depth of 2.20 metres at TP03 and TP04. Isolated variable soft zones were also identified by Dynamic Probing at DP06, DP08, DP20, DP23 and DP29. At DP06 and DP03 the soft areas extended to depths of about 2.00 metres.

Foundations:

Soil strength has been determined by SPT tests in the three boreholes and by Dynamic Probe resistance in the thirty locations examined. The visual assessment of the soils during trial pitting and the laboratory data is also utilised in assessing allowable bearing pressures.

Based on the data obtained we would suggest the use of traditional reinforced strip or pad foundations, founded at 0.80 to 1.00 metres BGL on the boulder clay. SPT values and Dynamic Probe data indicate an allowable bearing pressure of 150 kPa for the brown boulder clay at this depth. Total settlement of the order of 10mm can be expected under this load, differential movement should be negligible.

While the majority of probes and boreholes fall into the above category some variations were noted, with some MADE GROUND and or soft zones identified. The maximum depth of poor ground should be of the order of 2.00 metres.

Careful visual inspection of excavated formation is advised to ensure uniformity and suitability of the founding medium for each housing unit or units. All unsuitable material identified should be removed and replaced with low-grade concrete.

Ground Floor Slabs

The sub soils below the top-soil at a depth of about 0.50 metres should readily support lightly loaded ground floor slabs. All organic soils should be removed and imported hardcore infill should be suitably compacted and fully comply with current building regulations.

Excavation / Ground Water

The boulder clay deposits will remain stable during excavation for foundations or services. No ground water was encountered during the investigation and water ingress during foundation construction is not expected.

Statutory safety regulations, should however be noted, these prohibit personnel entering unsupported excavations greater than 1.20 metre deep, irrespective of apparent stability.

Roads and Pavements

CBR tests at shallow depth suggest that an average CBR of about 8% can be adopted for road and pavement construction. Again visual inspection to confirm suitability of formation is advised.

Percolation

BRE Digest 365 tests in six areas confirm that the sub soils will not be suitable for dispersion of storm and surface water in conventional soakaways. Disposal of storm or surface water to the Local Authority Drainage System is recommended.

Concrete

Tests indicate low sulphate concentrations and near neutral pH. No special precautions are deemed necessary to protect foundation concrete.

Environmental

Tests carried out on samples from this site indicate that the soils are classified as INERT with extremely low contamination levels. Material excavated from this site can be disposed of to licensed landfill or utilised within the site for non-engineering purposes, landscaping etc.

IGSL/JC
October 2018

Appendix I Boring Records

GEOTECHNICAL BORING RECORD

REPORT NUMBER 21167

CONTRACT Beech House, Scholarstown	BOREHOLE NO. BH01
	SHEET Sheet 1 of 1
CO-ORDINATES	RIG TYPE Dando
	BOREHOLE DIAMETER (mm) 200
GROUND LEVEL (m AOD)	BOREHOLE DEPTH (m) 6.40
	DATE COMMENCED 09/08/2018
	DATE COMPLETED 09/08/2018
CLIENT	SPT HAMMER REF. NO.
ENGINEER DBFL Consulting Eng.	ENERGY RATIO (%)
	BORED BY JO'T/MB
	PROCESSED BY EK

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL			0.20						
	Firm brown SILT/CLAY with occasional fine gravel				AA93296	D	1.00		N = 23 (2, 3, 5, 6, 6, 6)	
				1.50						
	Stiff brown sandy gravelly CLAY			2.00						
2	Stiff to very stiff dark brownish grey laminated CLAY with occasional fine gravel				AA93297	D	2.00		N = 26 (3, 4, 6, 7, 6, 7)	
3					AA93298	D	3.00		N = 34 (4, 6, 7, 9, 9, 9)	
4					AA93299	D	4.00		N = 38 (3, 7, 8, 9, 10, 11)	
5					AA93300	D	5.00		N = 55 (4, 11, 10, 12, 16, 17)	
6					AA98251	D	6.00		N = 57 (2, 7, 12, 14, 16, 15)	
				6.40						
	End of Borehole at 6.40 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
6.2	6.4	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scan and inspection pit completed .

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

IGSL BH LOG 21167.GPJ IGSL.GDT 22/8/18

GEOTECHNICAL BORING RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**BOREHOLE NO.**	**BH02**
		SHEET	Sheet 1 of 1
CO-ORDINATES	**RIG TYPE** Dando	**DATE COMMENCED**	10/08/2018
GROUND LEVEL (m AOD)	**BOREHOLE DIAMETER (mm)** 200	**DATE COMPLETED**	13/08/2018
	BOREHOLE DEPTH (m) 6.60		
CLIENT	**SPT HAMMER REF. NO.**	**BORED BY**	JO'T/MB
ENGINEER DBFL Consulting Eng.	**ENERGY RATIO (%)**	**PROCESSED BY**	EK

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL			0.20						
	Firm brown SILT/CLAY with some gravel and occasional cobbles			1.20	AA98252	D	1.00		N = 19 (2, 3, 4, 5, 5, 5)	
1	Stiff brown gravelly cobbly CLAY				AA98253	D	2.00		N = 21 (2, 3, 5, 5, 5, 6)	
2					AA98254	D	3.00		N = 25 (3, 4, 5, 6, 7, 7)	
3				3.50						
	Very stiff brown gravelly laminated SILT/CLAY with occasional cobbles				AA98255	D	4.00		N = 34 (2, 6, 7, 7, 9, 11)	
4					AA98256	D	5.00		N = 45 (2, 4, 9, 11, 11, 14)	
5					AA98257	D	6.00		N = 46 (3, 7, 13, 9, 11, 13)	
6				6.60						
	End of Borehole at 6.60 m									
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
4.4	4.5	0.75	
6.4	6.6	1.5	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scan and inspection pit completed .

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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GEOTECHNICAL BORING RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**BOREHOLE NO.**	**BH03**
		SHEET	Sheet 1 of 1
CO-ORDINATES	**RIG TYPE** Dando	**DATE COMMENCED**	13/08/2018
GROUND LEVEL (m AOD)	**BOREHOLE DIAMETER (mm)** 200	**DATE COMPLETED**	14/08/2018
	BOREHOLE DEPTH (m) 6.00		
CLIENT	**SPT HAMMER REF. NO.**	**BORED BY**	JO'T/MB
ENGINEER DBFL Consulting Eng.	**ENERGY RATIO (%)**	**PROCESSED BY**	EK

Depth (m)	Description	Legend	Elevation	Depth (m)	Samples: Ref. Number	Sample Type	Depth (m)	Recovery	Field Test Results	Standpipe Details
0	TOPSOIL			0.20						
	Firm brown SILT/CLAY with occasional gravel			0.90						
1	Layer of gravelly CLAY with frequent cobbles			1.60	AA98258	D	1.00		N = 40 (2, 3, 4, 15, 15, 6)	
2	Stiff to very stiff brown laminated SILT/CLAY with fine to medium gravel and occasional cobbles				AA98259	D	2.00		N = 24 (3, 2, 4, 6, 7, 7)	
3					AA98260	D	3.00		N = 27 (2, 4, 5, 7, 8, 7)	
4					AA98261	D	4.00		N = 27 (2, 4, 6, 7, 7, 7)	
5					AA98262	D	5.00		N = 29 (2, 4, 7, 7, 8, 7)	
6	End of Borehole at 6.00 m			6.00	AA98263	D	6.00		N = 35 (3, 6, 7, 9, 9, 10)	
7										
8										
9										

HARD STRATA BORING/CHISELLING

From (m)	To (m)	Time (h)	Comments
1.1	1.6	1	

WATER STRIKE DETAILS

Water Strike	Casing Depth	Sealed At	Rise To	Time (min)	Comments
					No water strike

GROUNDWATER PROGRESS

Date	Hole Depth	Casing Depth	Depth to Water	Comments

INSTALLATION DETAILS

Date	Tip Depth	RZ Top	RZ Base	Type

REMARKS CAT scan and inspection pit completed .

Sample Legend
D - Small Disturbed (tub)
B - Bulk Disturbed
LB - Large Bulk Disturbed
Env - Environmental Sample (Jar + Vial + Tub)
UT - Undisturbed 100mm Diameter Sample
P - Undisturbed Piston Sample
W - Water Sample

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Appendix II Trial Pit Records

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP01**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,578.73 E 726,784.07 N
		DATE STARTED	08/08/2018
		DATE COMPLETED	08/08/2018
CLIENT		**GROUND LEVEL (m)**	83.45
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
Firm to stiff brown gravelly CLAY with a low cobble content and a low boulder content. Cobbles are sub-angular and boulders are sub-angular to sub-rounded. Boulders are less than 400mm in size. (Possible made ground).		0.30	83.15						
1.0					AA94906	B	1.00		
Stiff brown gravelly CLAY with some cobbles and occasional boulders		1.20	82.25						
2.0					AA94907	B	2.00		
Stiff purple mottled blue SILT/CLAY with gravel		2.50	80.95						
End of Trial Pit at 2.80m		2.80	80.65		AA94908	B	2.80		
3.0									
4.0									

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP02**
		SHEET	Sheet 1 of 1
LOGGED BY	K. Kinsella	**CO-ORDINATES**	712,550.65 E 726,800.61 N
		DATE STARTED	10/08/2018
		DATE COMPLETED	10/08/2018
CLIENT		**GROUND LEVEL (m)**	84.00
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Firm brown TOPSOIL with rootlets		0.20	83.80						
Stiff brown/light brown sandy SILT/CLAY with rare subangular to subrounded gravel					AA98917	B	0.40-0.50		
		0.80	83.20						
Stiff brown sandy gravelly slightly cobbly SILT/CLAY with rare subrounded boulders up to 350mm, cobble content increases with depth					AA98918	B	1.00-1.10		
1.0									
2.0					AA98919	B	2.50-2.60		
End of Trial Pit at 2.70m		2.70	81.30						
3.0									
4.0									

Groundwater Conditions
Dry

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP03**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,582.41 E 726,843.35 N
		DATE STARTED	08/08/2018
		DATE COMPLETED	08/08/2018
CLIENT		**GROUND LEVEL (m)**	82.45
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
MADE GROUND (Comprised of brown gravelly clay with a low cobble content. Contains brick fragments and tiles. Cobbles are less than 300mm and sub-angular to sub-rounded)		0.20	82.25		AA94904	B	1.00		
1.0									
Stiff brown gravelly CLAY with a high cobble content and a low boulder content. Cobbles are angular to sub-angular. Boulders are sub-angular and less than 500mm in size. (Possibly made ground).		1.70	80.75		AA94905	B	2.00		
2.0									
End of Trial Pit at 2.50m		2.50	79.95						
3.0									
4.0									

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP04**
		SHEET	Sheet 1 of 1
LOGGED BY	K. Kinsella	**CO-ORDINATES**	712,580.24 E 726,937.92 N
		DATE STARTED	10/08/2018
		DATE COMPLETED	10/08/2018
CLIENT		**GROUND LEVEL (m)**	80.24
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Firm brown TOPSOIL with rootlets		0.20	80.04						
Stiff brown/light brown sandy very gravelly SILT with subangular to subrounded cobbles up to 120mm		0.45	79.79		AA98920	B	0.30-0.40		
Stiff to locally firm brown sandy gravelly CLAY with cobbles and rare subrounded boulders up to 450mm					AA98921	B	1.20-1.30		
2.0 End of Trial Pit at 2.20m		2.20	78.04		AA98922	B	2.10-2.20		
3.0									
4.0									

Groundwater Conditions
Dry

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP05**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,536.88 E 726,860.16 N
		DATE STARTED	08/08/2018
		DATE COMPLETED	08/08/2018
CLIENT		**GROUND LEVEL (m)**	83.09
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
Firm to stiff MADE GROUND in a gravelly clay matrix with a low cobble content. Contains brick fragments and tiles. Cobbles are less than 200mm and rounded to sub-rounded.		0.30	82.79						
1.0					AA94901	B	1.00		
2.0					AA94902	B	2.00		
Firm to stiff greyish brown gravelly CLAY with a low cobble content. Cobbles are angular to sub-angular and less than 200mm in size. (Possibly made ground).		2.30	80.79						
End of Trial Pit at 2.80m		2.80	80.29		AA94903	B	2.70		
3.0									
4.0									

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP06**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,333.26 E 726,830.99 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		**GROUND LEVEL (m)**	86.08
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
Firm to stiff brown slightly gravelly SILT/CLAY		0.30	85.78						
1.0 Firm to stiff greyish brown slightly gravelly CLAY with a low cobble content and rare shells. Cobbles are sub-angular to sub-rounded and less than 300mm.		1.00	85.08		AA81273	B	1.00		
2.0					AA81274	B	2.00		
Firm to stiff grey slightly gravelly CLAY eith a low cobble content. Cobbles are sun-angular to sub-rounded and less than 300mm.		2.40	83.68						
End of Trial Pit at 2.50m		2.50	83.58		AA81275	B	2.50		
3.0									
4.0									

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP07**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,385.49 E 726,811.90 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		**GROUND LEVEL (m)**	85.82
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.30	85.52						
Firm to stiff greyish brown gravelly CLAY with a medium cobble content. Cobbles are angular to sub-angular and less than 300mm in size.					AA81276	B	1.00		
					AA81277	B	2.00		
End of Trial Pit at 2.50m		2.50	83.32						

1.0
2.0
3.0
4.0

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP08**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,455.10 E 726,802.32 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		**GROUND LEVEL (m)**	84.73
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
TOPSOIL		0.30	84.43						
Firm to stiff brown slightly gravelly CLAY with a medium cobble content and pockets of sand and gravel which are less than 10mm. Cobbles are sub-angular to sub-rounded and less than 300mm in size.					AA81278	B	1.00		
					AA81279	B	2.00		
End of Trial Pit at 2.50m		2.50	82.23						

0.0 1.0 2.0 3.0 4.0

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP09**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,394.71 E 726,888.26 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		**GROUND LEVEL (m)**	85.56
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
Firm to stiff brown slightly gravelly CLAY with a low cobble content. Cobbles are angular to sub-angular and less than 300mm.		0.30	85.26						
1.0					AA81271	B	1.10		
2.0					AA81272	B	2.10		
End of Trial Pit at 2.50m		2.50	83.06						
3.0									
4.0									

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP10**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,483.42 E 726,850.01 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		**GROUND LEVEL (m)**	84.38
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.30	84.08						
Firm to stiff brown slightly gravelly CLAY with a medium cobble content and a medium boulder content. Cobbles are angular to sub-angular and boulders are angular. Boulders are less than 400mm.					AA81286	B	0.30		
					AA81287	B	0.50		
1.0					AA81288	B	1.00		
2.0					AA81289	B	2.00		
End of Trial Pit at 2.50m		2.50	81.88						
3.0									
4.0									

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP11**
		SHEET	Sheet 1 of 1
LOGGED BY	EK	**CO-ORDINATES**	712,498.97 E 726,906.05 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		**GROUND LEVEL (m)**	83.22
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.30	82.92						
Firm to stiff brown gravelly CLAY with a low cobble content. Cobbles are sub-angular to sub-rounded amd less than 200mm in size.					AA81282	B	1.00		
End of Trial Pit at 2.10m		2.10	81.12		AA81283	B	2.00		

1.0
2.0
3.0
4.0

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	**TRIAL PIT NO.**	**TP12**
		SHEET	Sheet 1 of 1
LOGGED BY	K. Kinsella	**CO-ORDINATES**	712,427.12 E 726,940.30 N
		DATE STARTED	10/08/2018
		DATE COMPLETED	10/08/2018
CLIENT		**GROUND LEVEL (m)**	83.88
ENGINEER	DBFL Consulting Engineers	**EXCAVATION METHOD**	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Firm brown TOPSOIL with rootlets		0.15	83.73						
Firm brown/light brown sandy SILT/CLAY with occasional subangular to subrounded gravel		0.55	83.33		AA98926	B	0.40-0.50		
Firm to stiff brown sandy gravelly SILT/CLAY with occasional subrounded boulders up to 450mm, cobble content increases with depth					AA98927	B	1.00-1.10		
1.0									
2.0					AA98928	B	2.00-2.10		
End of Trial Pit at 2.80m		2.80	81.08						
3.0									
4.0									

Groundwater Conditions
Dry

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	TRIAL PIT NO.	TP13
		SHEET	Sheet 1 of 1
LOGGED BY	EK	CO-ORDINATES	712,427.12 E 726,847.94 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		GROUND LEVEL (m)	85.23
		EXCAVATION METHOD	
ENGINEER	DBFL Consulting Engineers		

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.30	84.93						
Firm to stiff brown gravelly CLAY with a low cobble content. Cobbles are sub-angular to sub-rounded amd less than 300mm in size.					AA81280	B	1.00		
					AA81281	B	2.00		
End of Trial Pit at 2.60m		2.60	82.63						

1.0
2.0
3.0
4.0

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	TRIAL PIT NO.	TP14
		SHEET	Sheet 1 of 1
LOGGED BY	K. Kinsella	CO-ORDINATES	712,513.34 E 726,975.55 N
		DATE STARTED	10/08/2018
		DATE COMPLETED	10/08/2018
CLIENT		GROUND LEVEL (m)	81.03
ENGINEER	DBFL Consulting Engineers	EXCAVATION METHOD	

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 Firm brown TOPSOIL with rootlets		0.10	80.93						
Firm brown sandy SILT/CLAY with occasional subangular to subrounded gravel					AA98923	B	0.50-0.60		
1.0 Stiff to firm brown sandy gravelly slightly cobbly SILT/CLAY with rare subangular to subrounded boulders up to 450mm, cobble content increases with depth.		1.05	79.98		AA98924	B	1.50-1.60		
2.0					AA98925	B	2.50-2.60		
End of Trial Pit at 2.75m		2.75	78.28						
3.0									
4.0									

Groundwater Conditions
Dry

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TRIAL PIT RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	TRIAL PIT NO.	TP15
		SHEET	Sheet 1 of 1
LOGGED BY	EK	CO-ORDINATES	712,528.38 E 726,918.79 N
		DATE STARTED	07/08/2018
		DATE COMPLETED	07/08/2018
CLIENT		GROUND LEVEL (m)	82.23
		EXCAVATION METHOD	
ENGINEER	DBFL Consulting Engineers		

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
Firm to stiff brown slightly gravelly SILT/CLAY with a medium cobble content and a low boulder content. Cobbles and boulders are sub-angular to sub-rounded and less than 400mm in size.		0.30	81.93		AA81284	B	1.00		
					AA81285	B	2.00		
End of Trial Pit at 2.30m		2.30	79.93						

1.0
2.0
3.0
4.0

Groundwater Conditions

Stability
Good

General Remarks
Pit terminated due to very slow progress

IGSL TP LOG 21167.GPJ IGSL.GDT 15/8/18

TP01 - 1 of 2

TP01 - 2 of 2

TP02 - 1 of 2

TP02 - 2 of 2

TP03 - 1 of 2

TP03 - 2 of 2

TP04 - 1 of 2

TP04 - 2 of 2

TP05 - 1 of 2

TP05 - 2 of 2

TP06 - 1 of 2

TP06 - 2 of 2

TP07 - 1 of 2

TP07 - 2 of 2

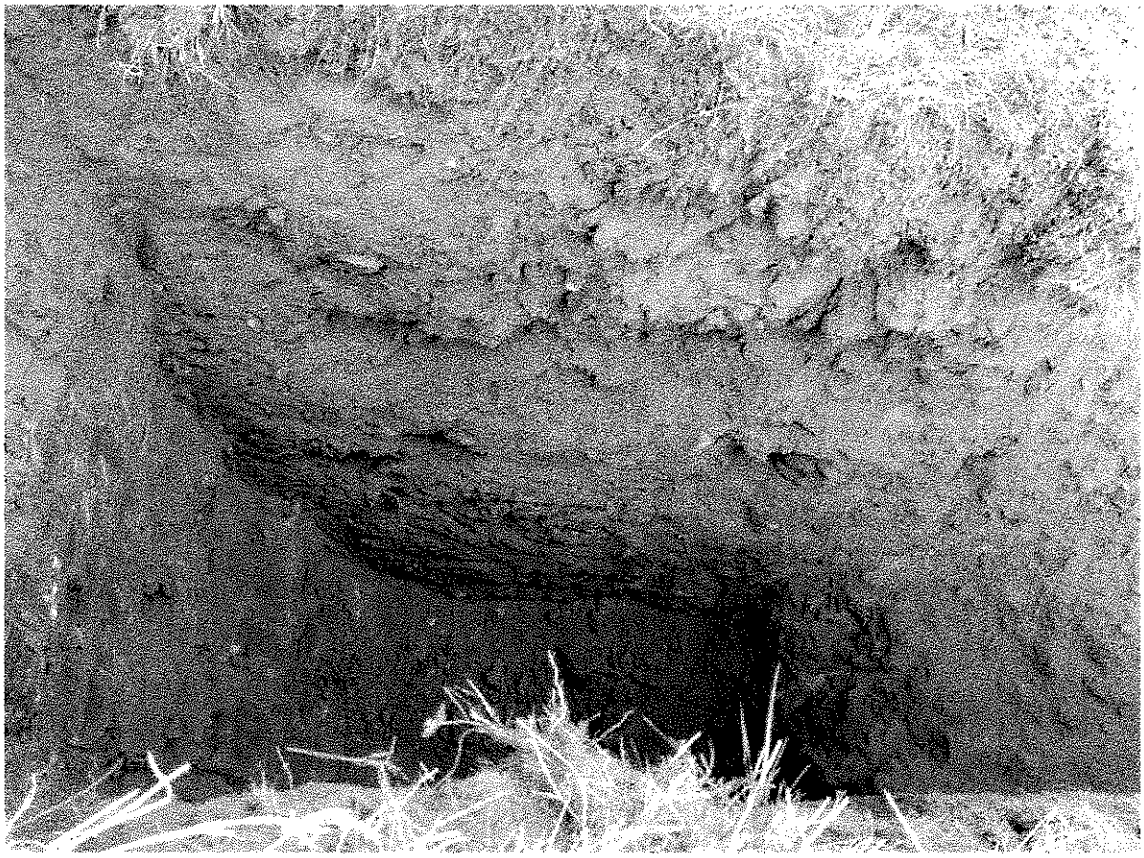
TP08 - 1 of 2

TP08 - 2 of 2

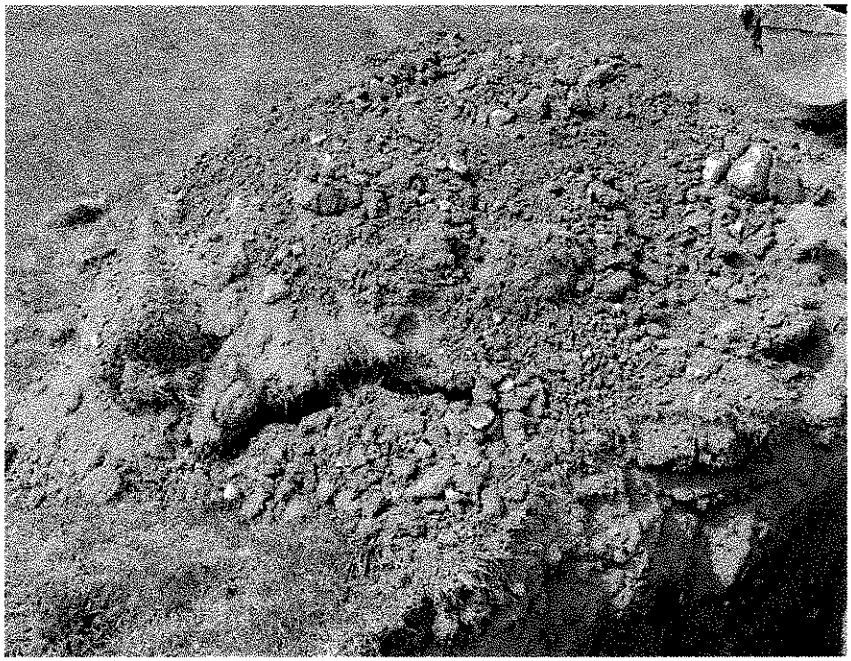
TP09 - 1 of 1

TP10 - 1 of 2

TP10 - 2 of 2



TP11 - 1 of 2



TP11 - 2 of 2

TP12 - 1 of 2

TP12 - 2 of 2

TP13 - 1 of 2

TP13 - 2 of 2

TP14 - 1 of 2

TP14 - 2 of 2

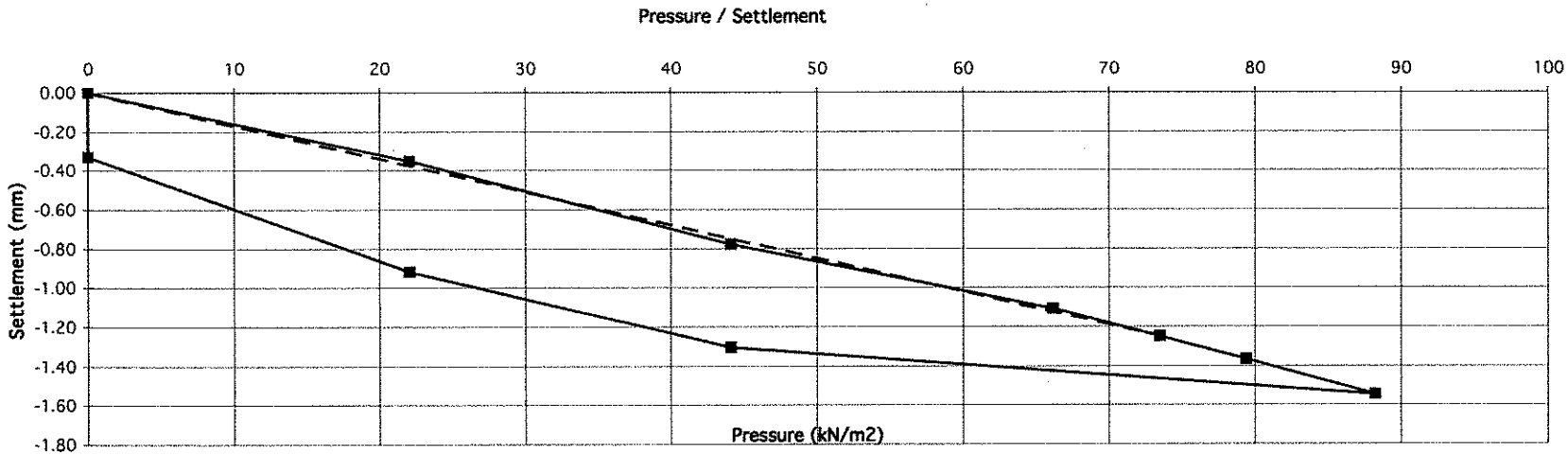
TP15 - 1 of 2

TP15 - 2 of 2

Appendix III Plate Bearing Tests

PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve
Reference No.	R92258	
Contract	Beech House, Scholarstown	
Test No.	PBT 1 Load	
Location	Scholarstown, Co. Dublin	
Depth	0.40mbgl	
Client	DBFL Consulting Engineers	
Plate Diameter:	450 mm	
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test	
Technician	K. Kinsella	
Authorised by		
Date	13/8/18	

Description of soil under test (natural soil, placed fill, sub-base)
Light brown sandy SILT with occasional gravel
Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 59
Modulus of subgrade reaction = 38 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 5.2 %

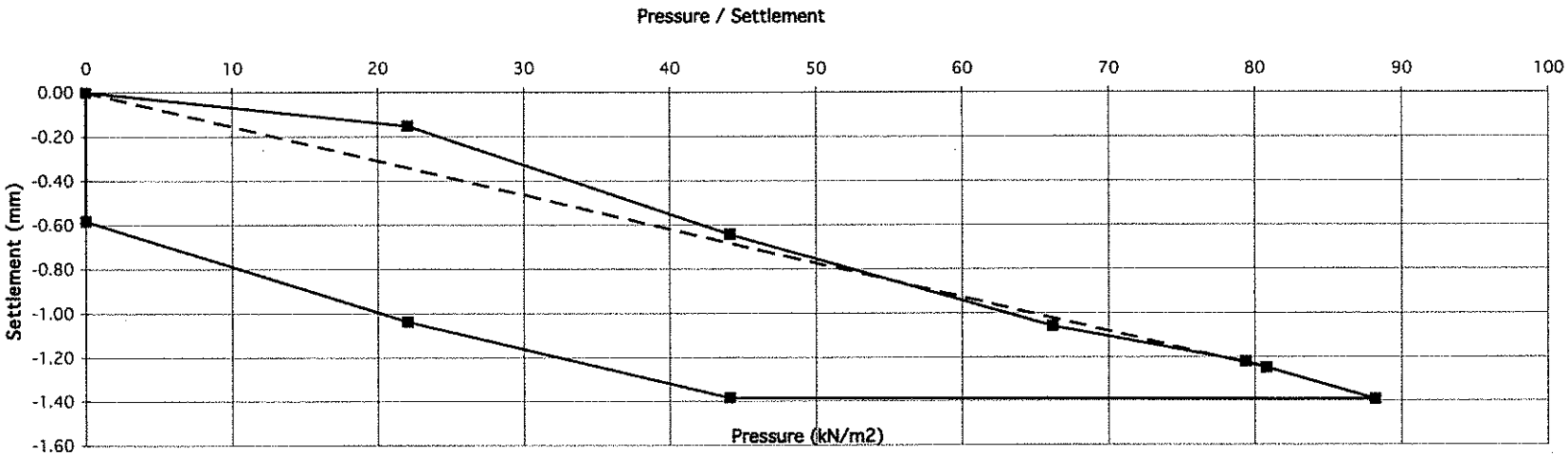
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92258
Contract	Beech House, Scholarstown
Test No.	PBT 1 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.40mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy SILT with occasional gravel

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl

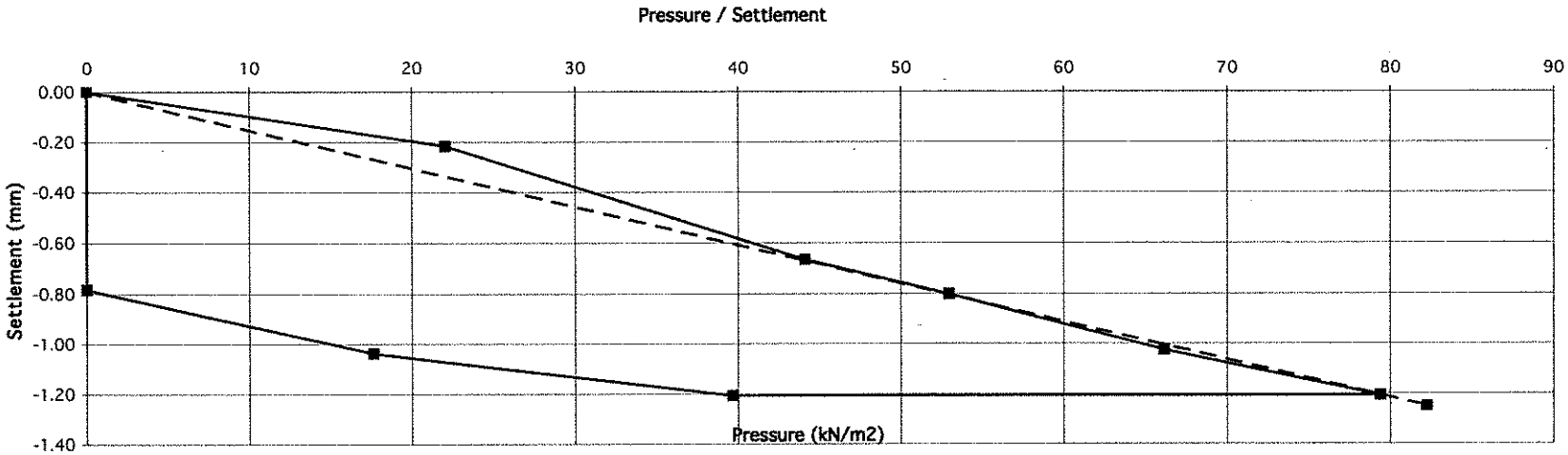


Gradient at 1.25 mm settlement intersection = 65
Modulus of subgrade reaction = 42 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 6.2 %

PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve	
Reference No.	R92259		
Contract	Beech House, Scholarstown		
Test No.	PBT 2 Load		
Location	Scholarstown, Co. Dublin		
Depth	0.50mbgl		
Client	DBFL Consulting Engineers		
Plate Diameter:	450 mm		
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test		
Technician	K. Kinsella		
Authorised by			
Date	13/8/18		

Description of soil under test (natural soil, placed fill, sub-base)	
Light brown sandy SILT with occasional gravel	
Easting (m)	
Northing (m)	
Ground Level (mOD)	
Sample Ref No.	N/A
Depth	0.00 m bgl



Gradient at 1.25 mm settlement intersection = 66
Modulus of subgrade reaction = 42 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 6.4 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

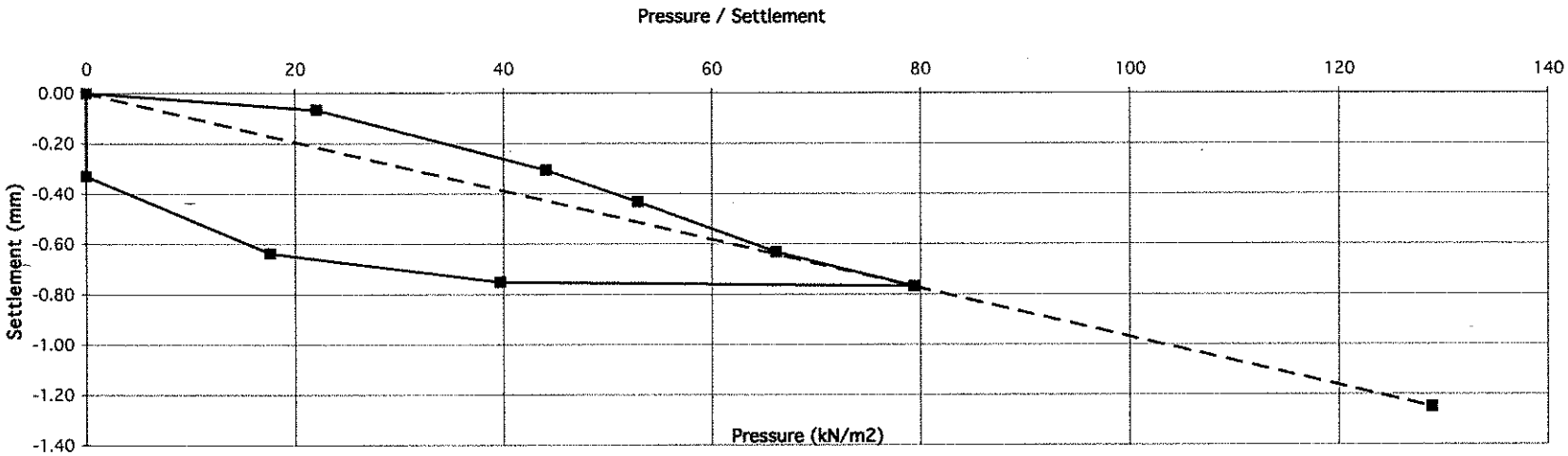
Reference No.	R92259
Contract	Beech House, Scholarstown
Test No.	PBT 2 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test (natural soil, placed fill, sub-base)

Light brown sandy SILT with occasional gravel

Easting (m)
Northing (m)
Ground Level (mOD)

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 103
Modulus of subgrade reaction = 66 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 13.8 %

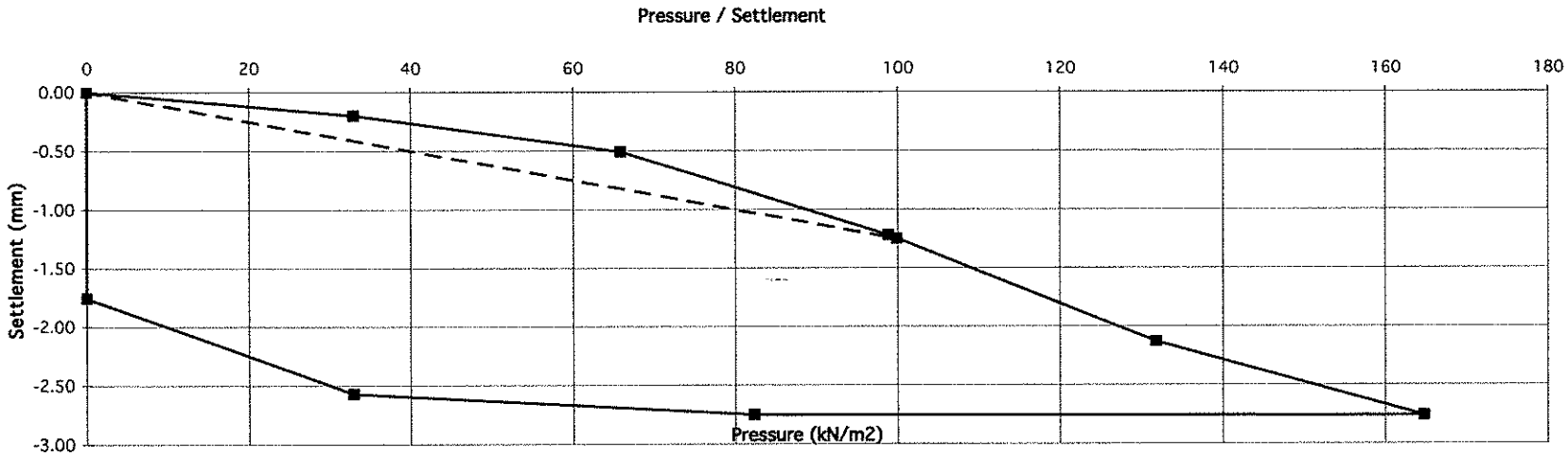
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92218
Contract	Beech House, Scholarstown
Test No.	PBT 03 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown very sandy gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 80
Modulus of subgrade reaction = 51 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 8.9 %

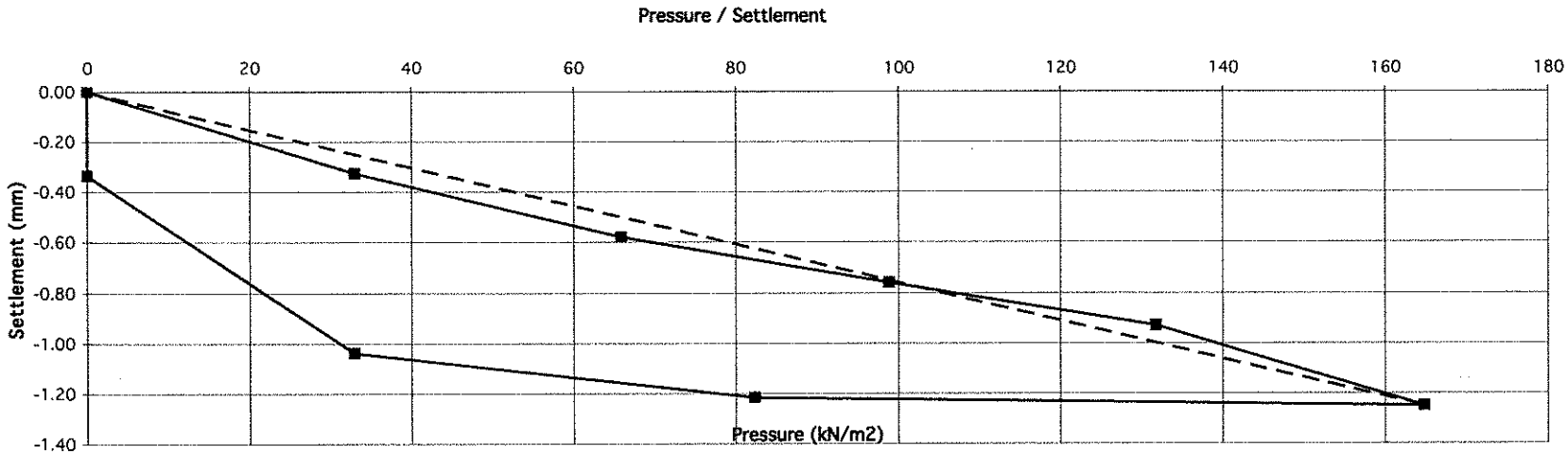
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92218
Contract	Beech House, Scholarstown
Test No.	PBT 03 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown very sandy gravelly SILT

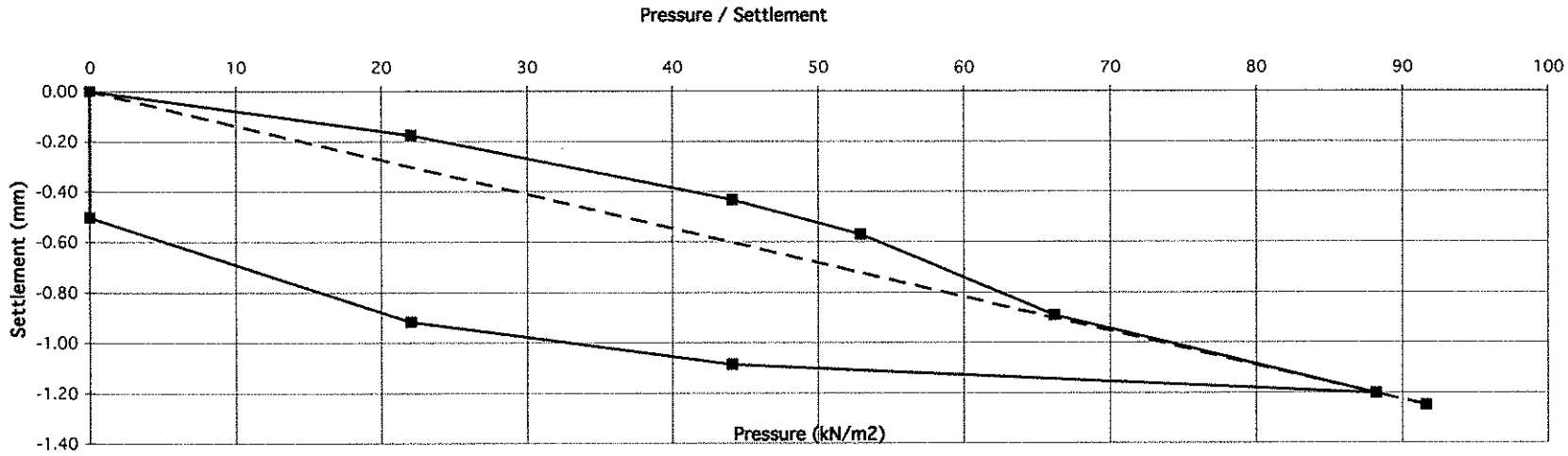
Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 132
Modulus of subgrade reaction = 85 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 21.2 %

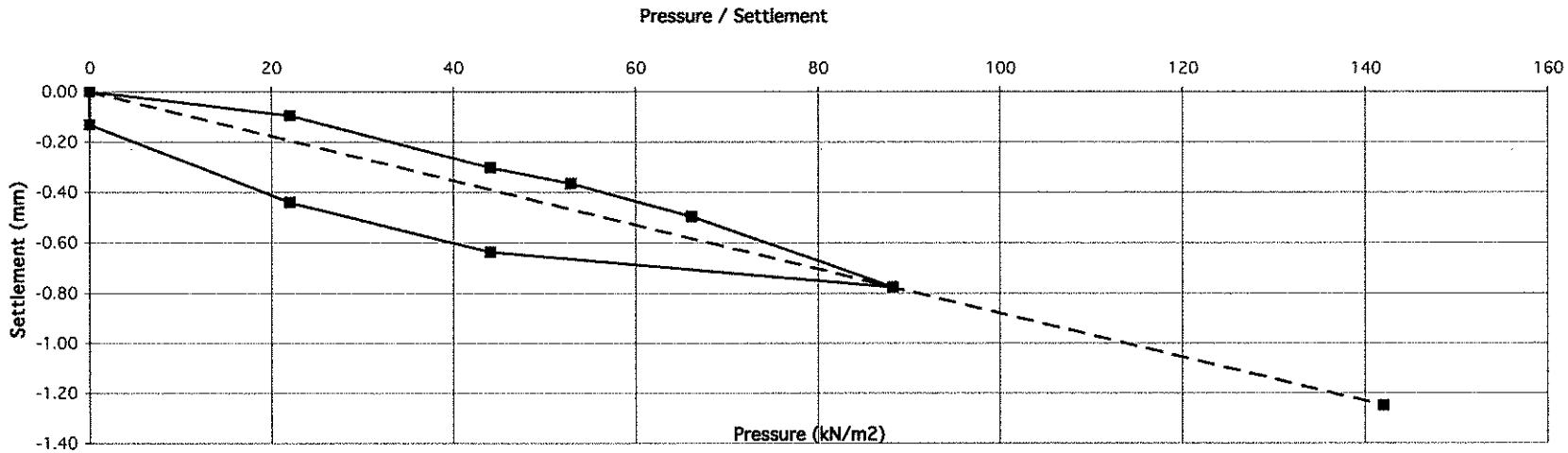
PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve	
Reference No.	R92260		
Contract	Beech House, Scholarstown	Description of soil under test (natural soil, placed fill, sub-base)	
Test No.	PBT 4 Load	Light brown sandy SILT	
Location	Scholarstown, Co. Dublin		
Depth	0.50mbgl	Easting (m)	
Client	DBFL Consulting Engineers	Northing (m)	
Plate Diameter:	450 mm	Ground Level (mOD)	
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test	Sample Ref No. N/A	
Technician	K. Kinsella	Depth 0.00 m bgl	
Authorised by			
Date	13/8/18		



Gradient at 1.25 mm settlement intersection = 73
Modulus of subgrade reaction = 47 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 7.7 %

PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve	
Reference No.	R92260		
Contract	Beech House, Scholarstown	Description of soil under test (natural soil, placed fill, sub-base)	
Test No.	PBT 4 ReLoad	Light brown sandy SILT	
Location	Scholarstown, Co. Dublin		
Depth	0.50mbgl	Easting (m)	
Client	DBFL Consulting Engineers	Northing (m)	
Plate Diameter:	450 mm	Ground Level (mOD)	
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test	Sample Ref No. N/A	
Technician	K. Kinsella	Depth 0.00 m bgl	
Authorised by			
Date	13/8/18		



Gradient at 1.25 mm settlement intersection = 114
Modulus of subgrade reaction = 73 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 16.4 %

PLATE TEST REPORT SHEET (F3.1)

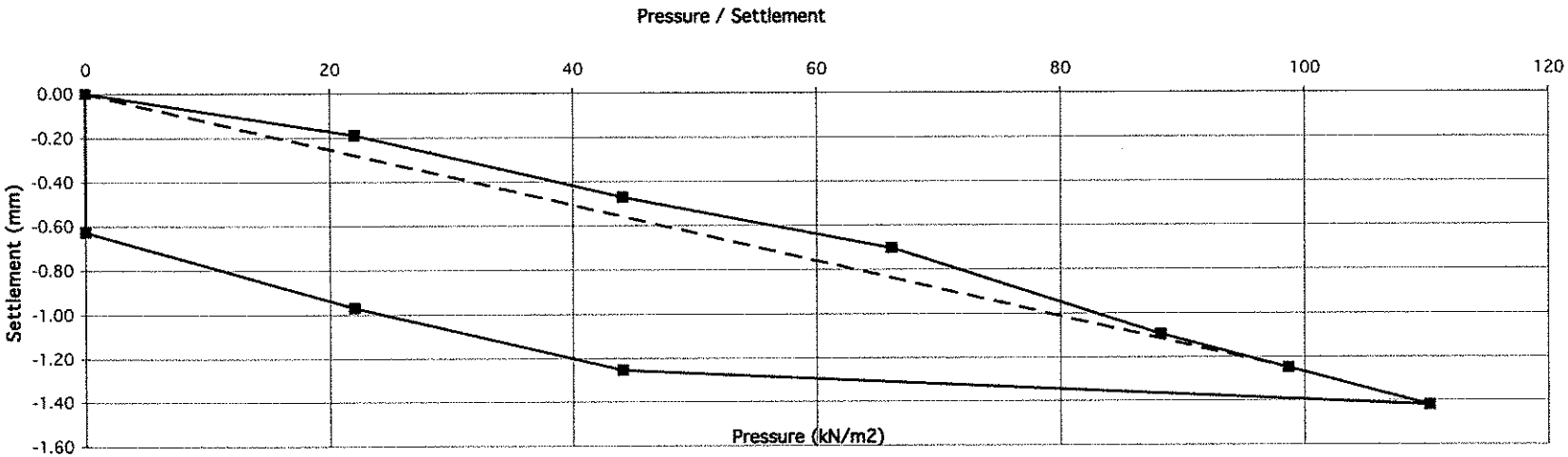
Applied Pressure/Settlement Curve

Reference No.	R92261
Contract	Beech House, Scholarstown
Test No.	PBT 5 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy slightly gravelly SILT with rare cobbles

Easting (m)
Northing (m)
Ground Level (mOD)

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 79
Modulus of subgrade reaction = 51 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 8.7 %

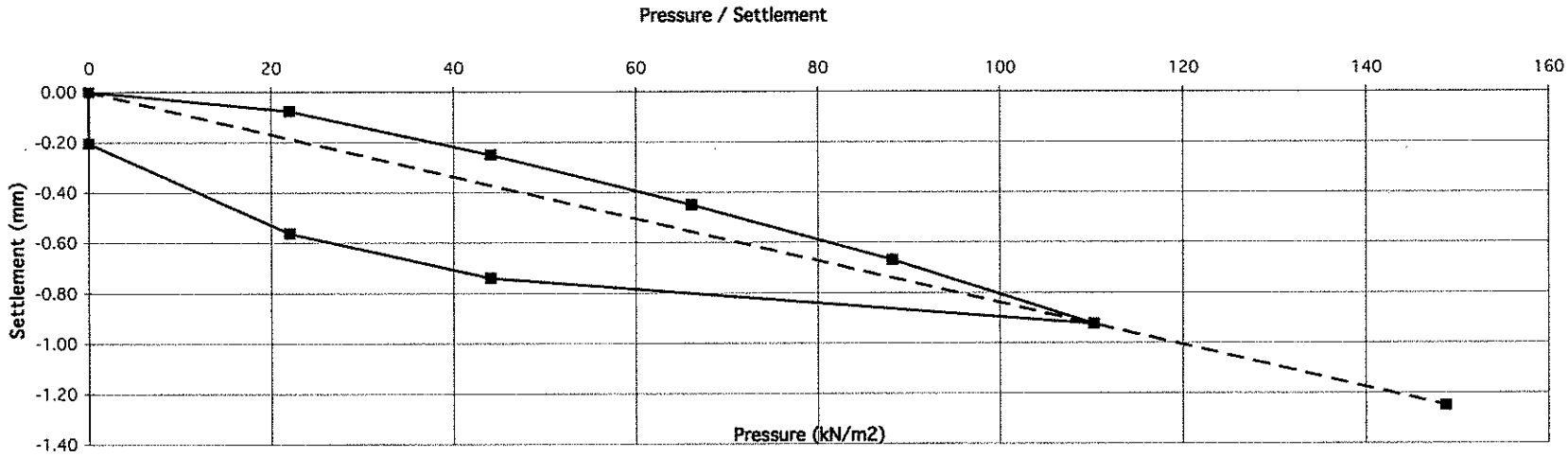
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92261
Contract	Beech House, Scholarstown
Test No.	PBT 5 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy slightly gravelly SILT with rare cobbles

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 119
Modulus of subgrade reaction = 77 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 17.7 %

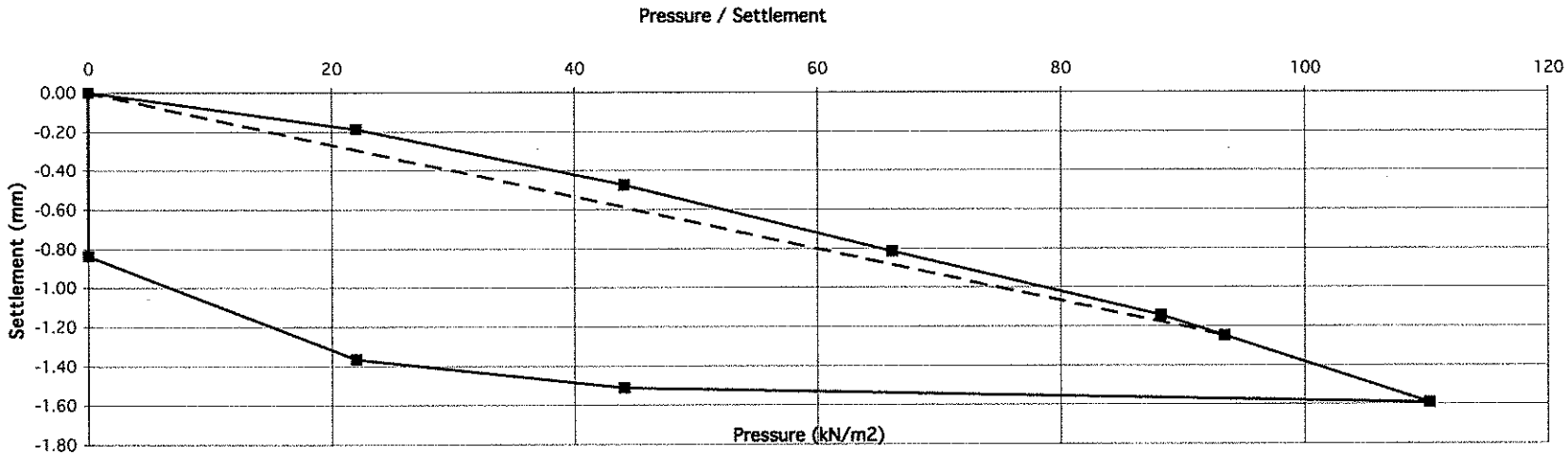
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92262
Contract	Beech House, Scholarstown
Test No.	PBT 6 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy slightly gravelly SILT with rare cobbles

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 75
Modulus of subgrade reaction = 48 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 7.9 %

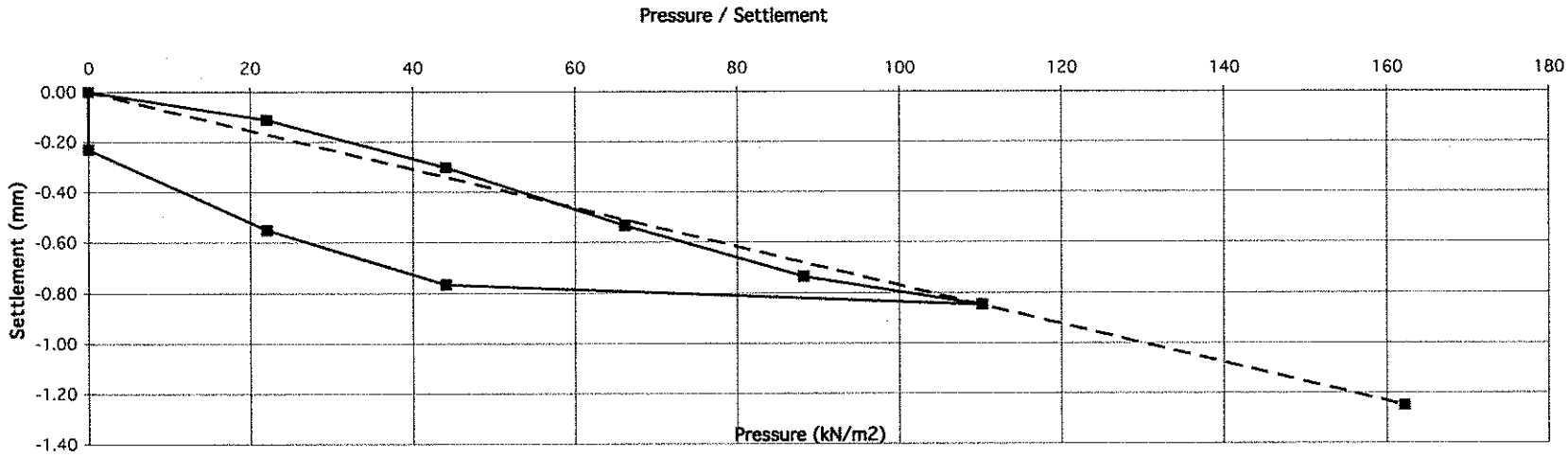
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92262
Contract	Beech House, Scholarstown
Test No.	PBT 6 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy slightly gravelly SILT with rare cobbles

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 130
Modulus of subgrade reaction = 83 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 20.6 %

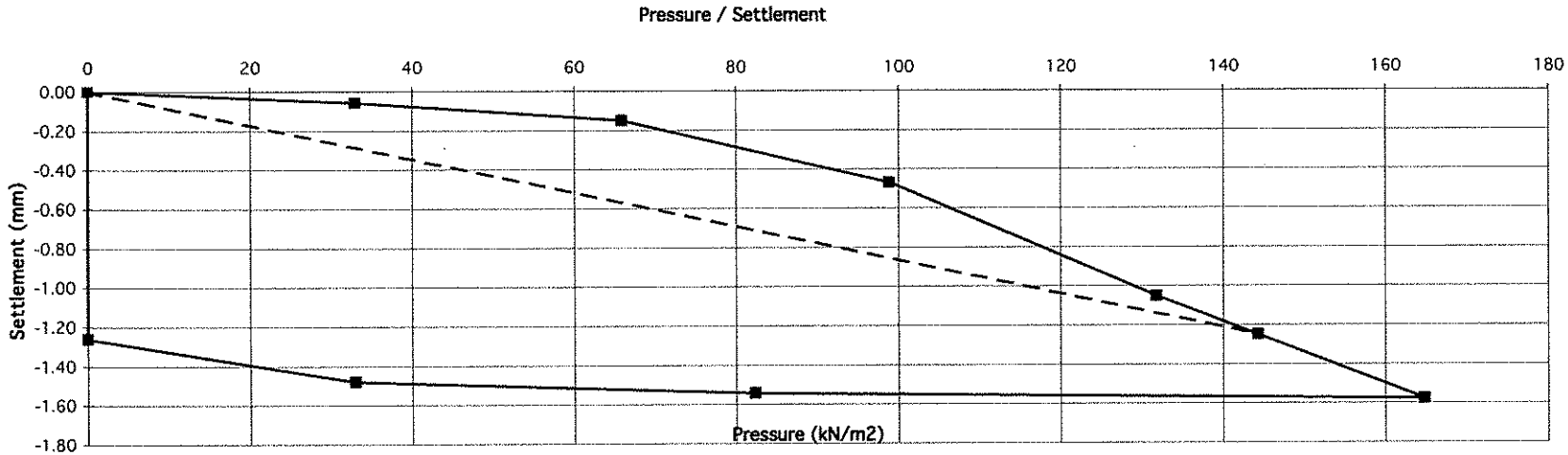
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92219
Contract	Beech House, Scholarstown
Test No.	PBT 07 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown sandy slightly gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 115
Modulus of subgrade reaction = 74 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 16.8 %

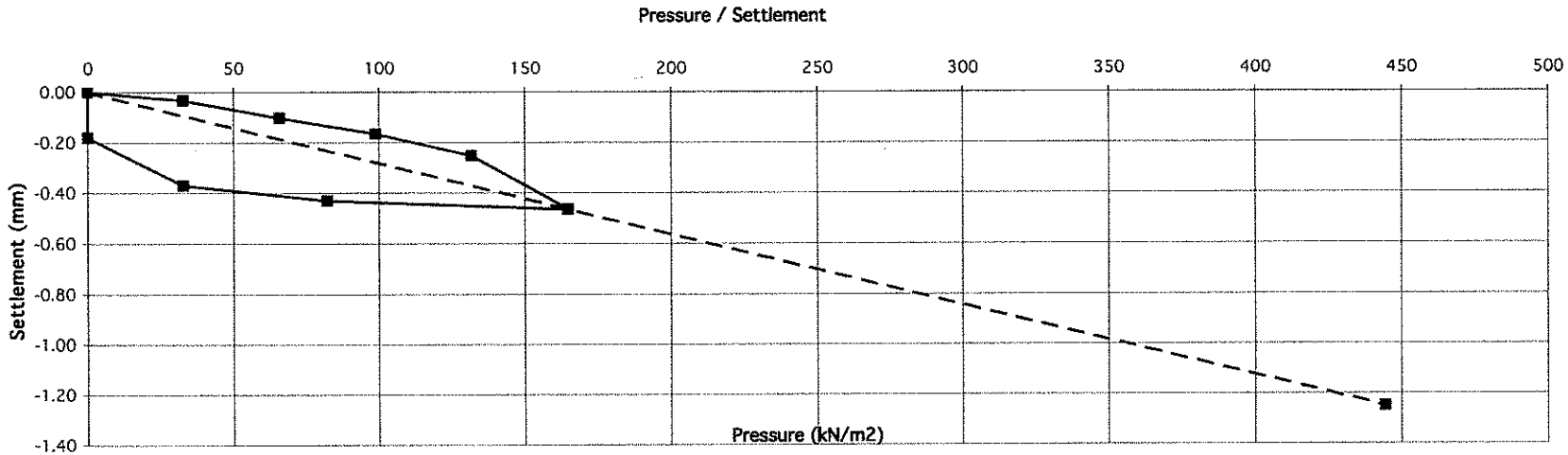
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92219
Contract	Beech House, Scholarstown
Test No.	PBT 07 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown sandy slightly gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



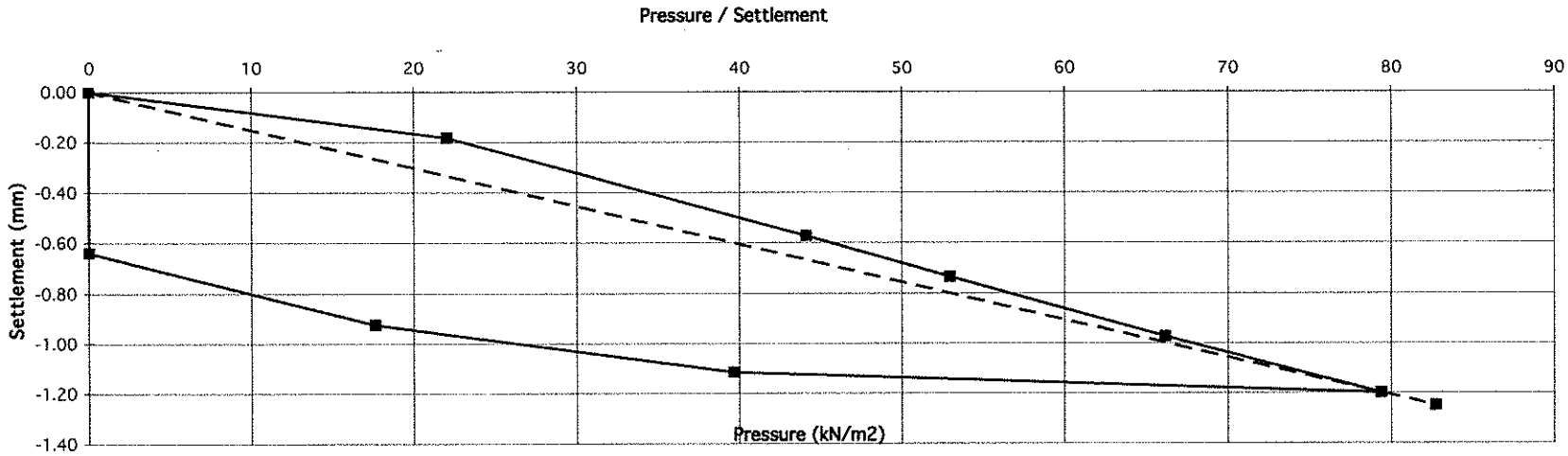
Gradient at 1.25 mm settlement intersection = 356
Modulus of subgrade reaction = 229 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 118.2 %

PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve
Reference No.	R92263	
Contract	Beech House, Scholarstown	
Test No.	PBT 8 Load	
Location	Scholarstown, Co. Dublin	
Depth	0.50mbgl	
Client	DBFL Consulting Engineers	
Plate Diameter:	450 mm	
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test	
Technician	K. Kinsella	
Authorised by		
Date	13/8/18	

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy slightly gravelly SILT with rare cobbles

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 66
Modulus of subgrade reaction = 43 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 6.4 %

PLATE TEST REPORT SHEET (F3.1)

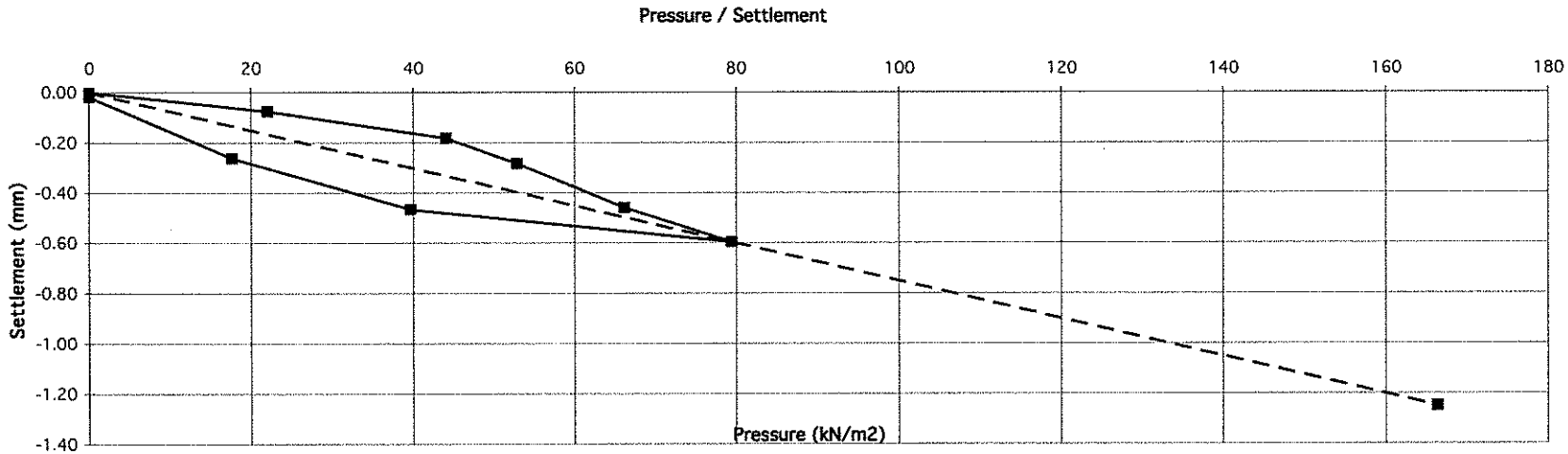
Applied Pressure/Settlement Curve

Reference No.	R92263
Contract	Beech House, Scholarstown
Test No.	PBT 8 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy slightly gravelly SILT with rare cobbles

Easting (m)
Northing (m)
Ground Level (mOD)

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 133
Modulus of subgrade reaction = 86 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 21.5 %

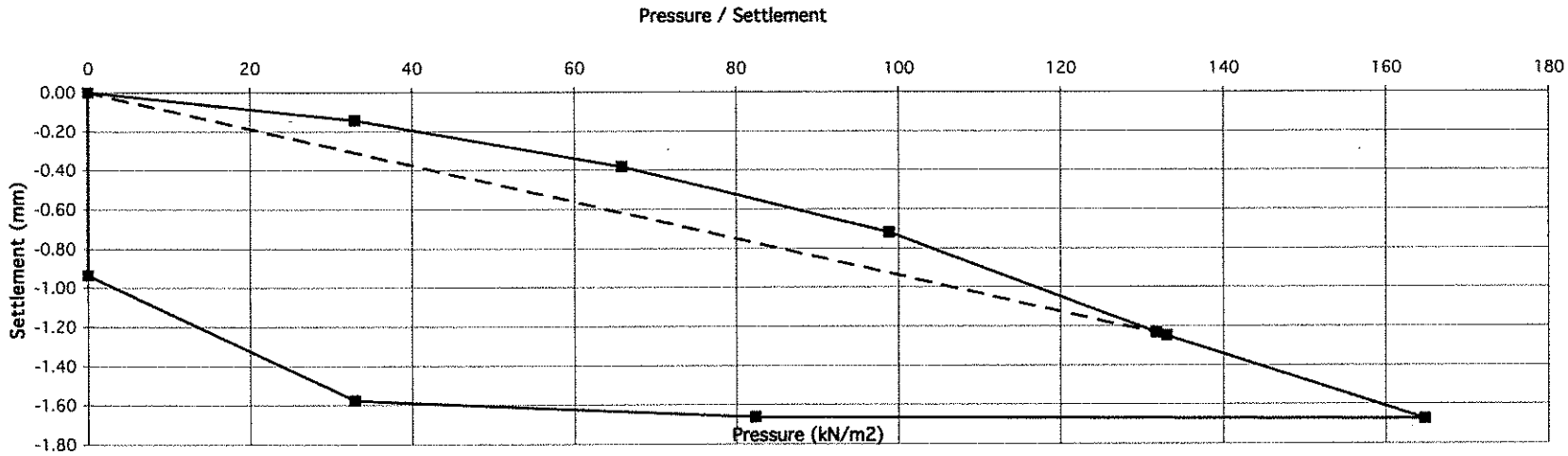
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92220
Contract	Beech House, Scholarstown
Test No.	PBT 09 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown very sandy gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 106
Modulus of subgrade reaction = 68 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 14.6 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

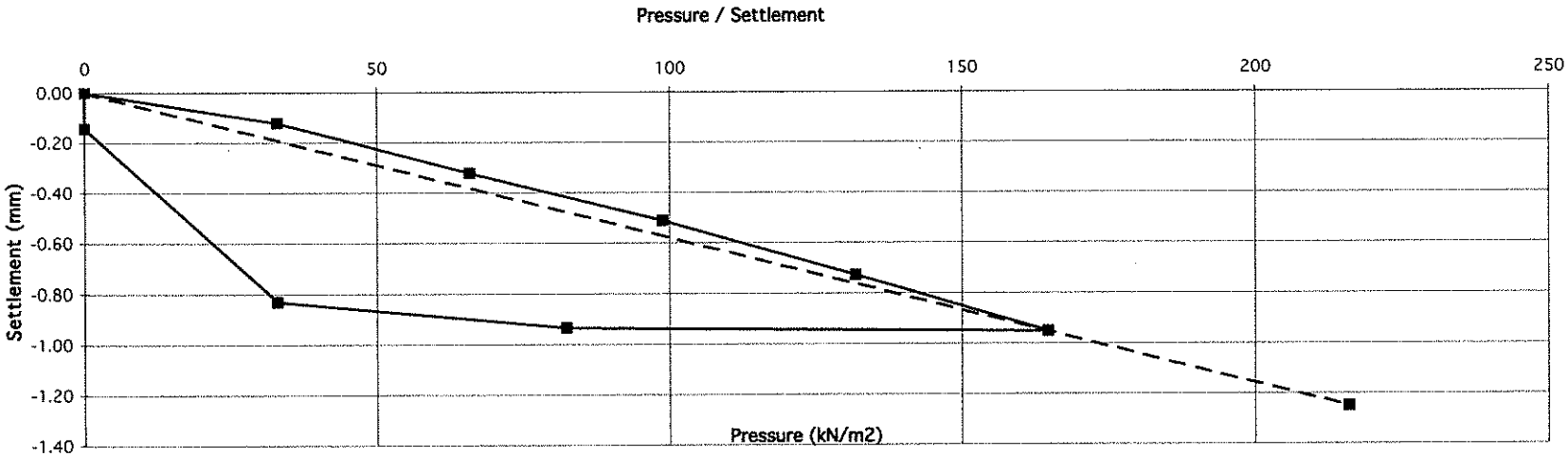
Reference No.	R92220
Contract	Beech House, Scholarstown
Test No.	PBT 09 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test (natural soil, placed fill, sub-base)

Brown very sandy gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 173
Modulus of subgrade reaction = 111 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 33.9 %

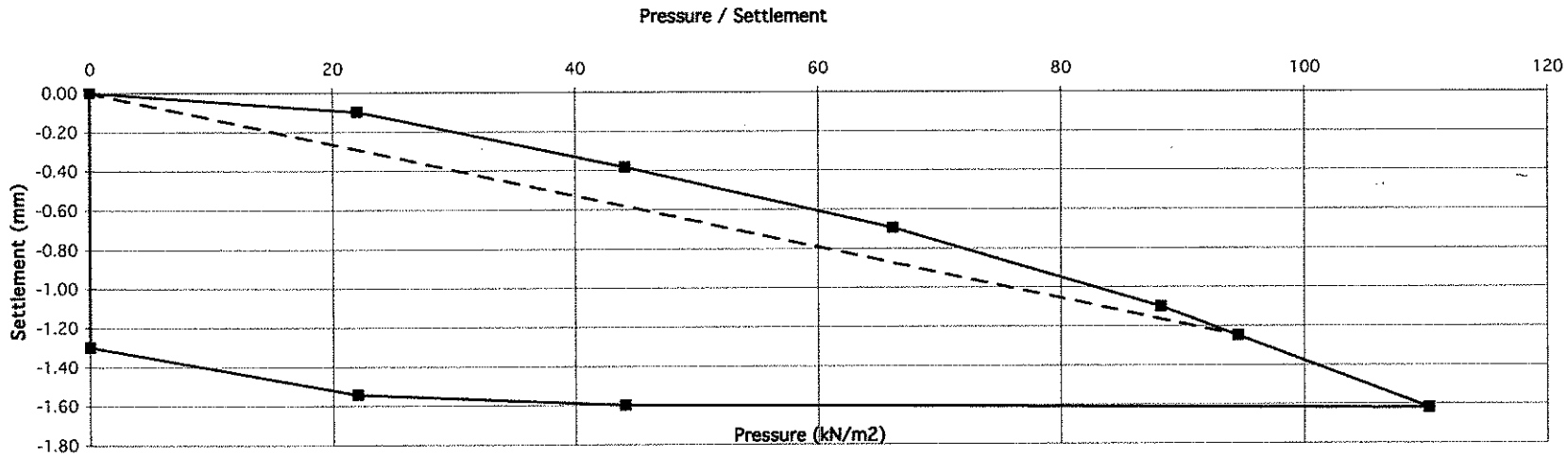
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92264
Contract	Beech House, Scholarstown
Test No.	PBT 10 Load
Location	Scholarstown, Co. Dublin
Depth	0.40mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 76
Modulus of subgrade reaction = 49 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 8.1 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92264
Contract	Beech House, Scholarstown
Test No.	PBT 10 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.40mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/13/2018

Description of soil under test (natural soil, placed fill, sub-base)

Light brown sandy SILT

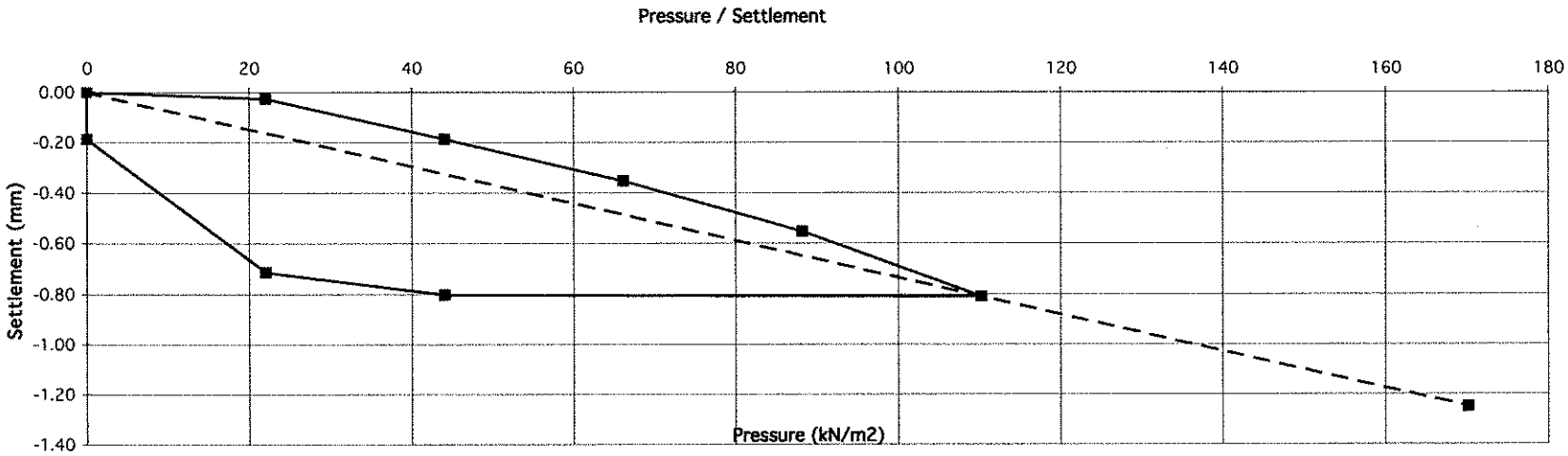
Easting (m)

Northing (m)

Ground Level (mOD)

Sample Ref No. N/A

Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 136

Modulus of subgrade reaction = 88 MPa/m

Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 22.4 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

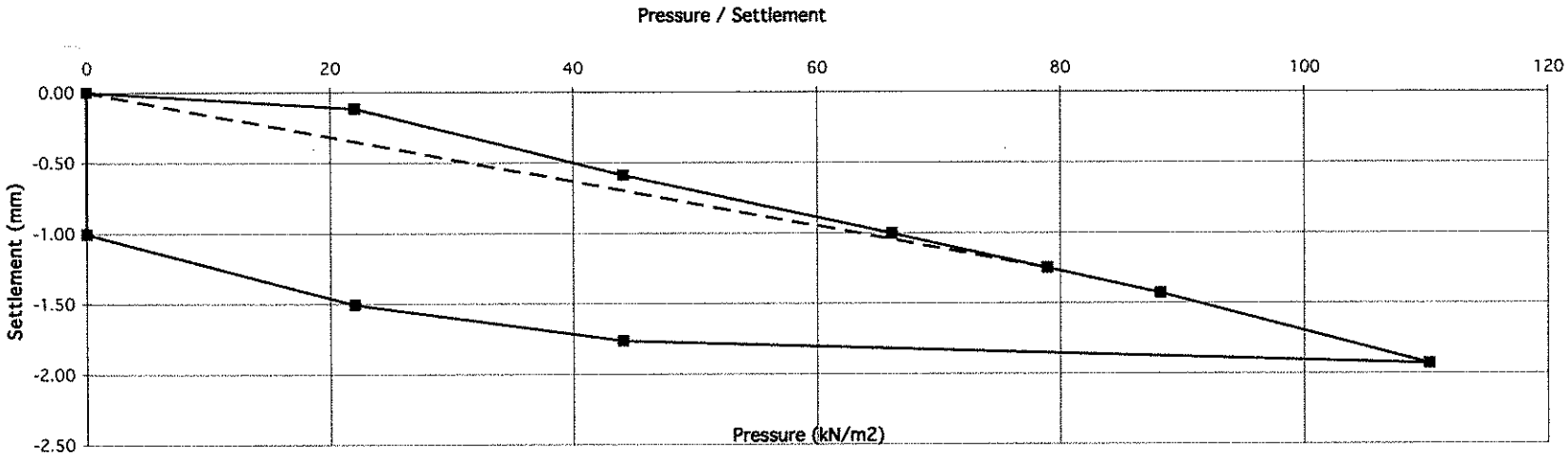
Reference No.	R92265
Contract	Beech House, Scholarstown
Test No.	PBT 11 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test (natural soil, placed fill, sub-base)

Light brown sandy SILT

Easting (m)
Northing (m)
Ground Level (mOD)

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 63
Modulus of subgrade reaction = 41 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 5.9 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92265
Contract	Beech House, Scholarstown
Test No.	PBT 11 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test (natural soil, placed fill, sub-base)

Light brown sandy SILT

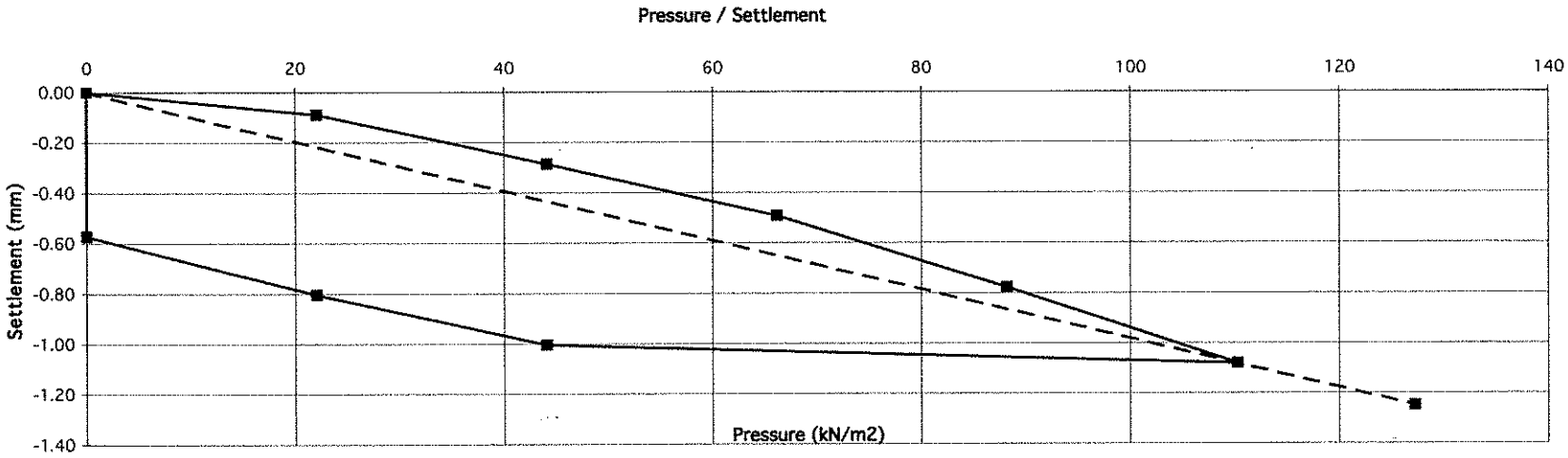
Easting (m)

Northing (m)

Ground Level (mOD)

Sample Ref No. N/A

Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 102

Modulus of subgrade reaction = 65 MPa/m

Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 13.5 %

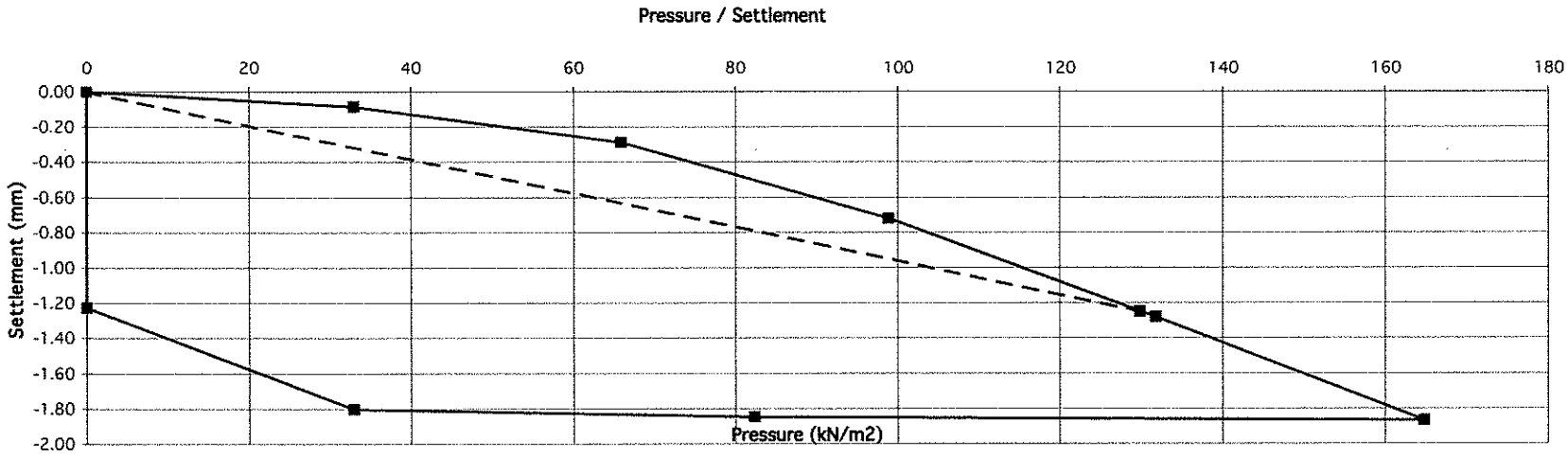
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92221
Contract	Beech House, Scholarstown
Test No.	PBT 12 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown sandy gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 104
Modulus of subgrade reaction = 67 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 14.0 %

PLATE TEST REPORT SHEET (F3.1)

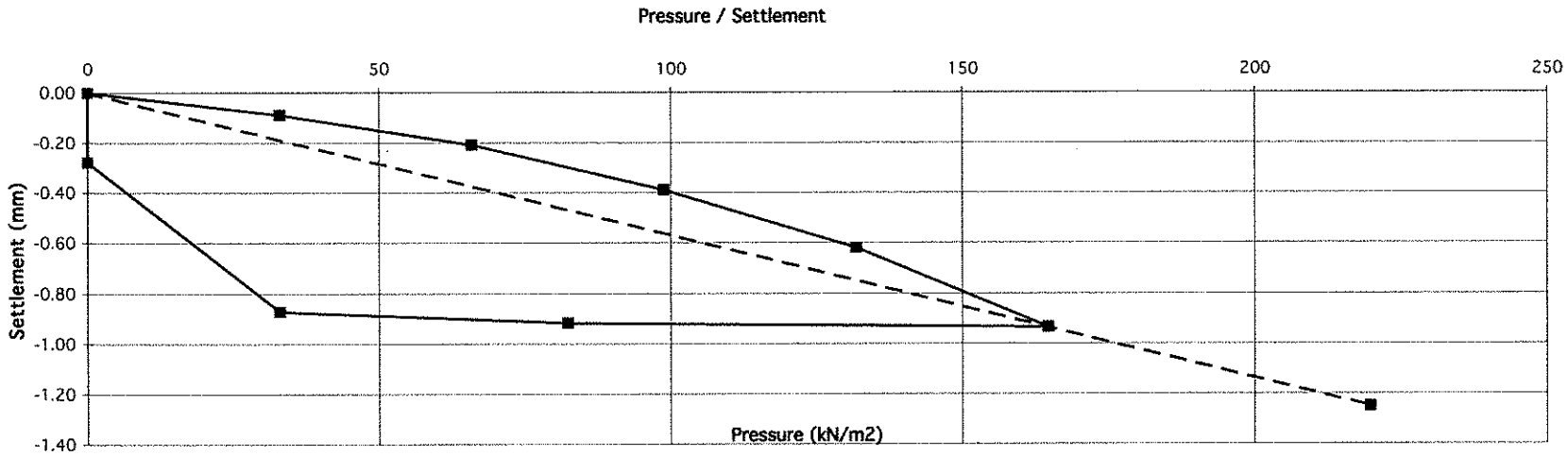
Applied Pressure/Settlement Curve

Reference No.	R92221
Contract	Beech House, Scholarstown
Test No.	PBT 12 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown sandy gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 176
Modulus of subgrade reaction = 113 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 34.9 %

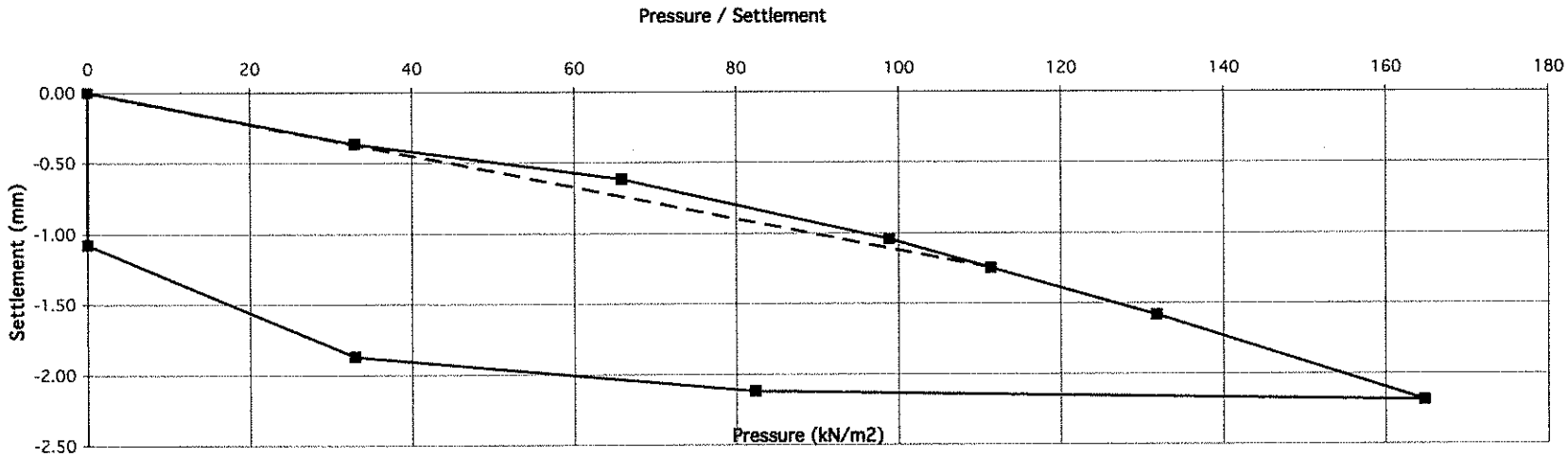
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92222
Contract	Beech House, Scholarstown
Test No.	PBT 13 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown very sandy gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 89
Modulus of subgrade reaction = 57 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 10.7 %

PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

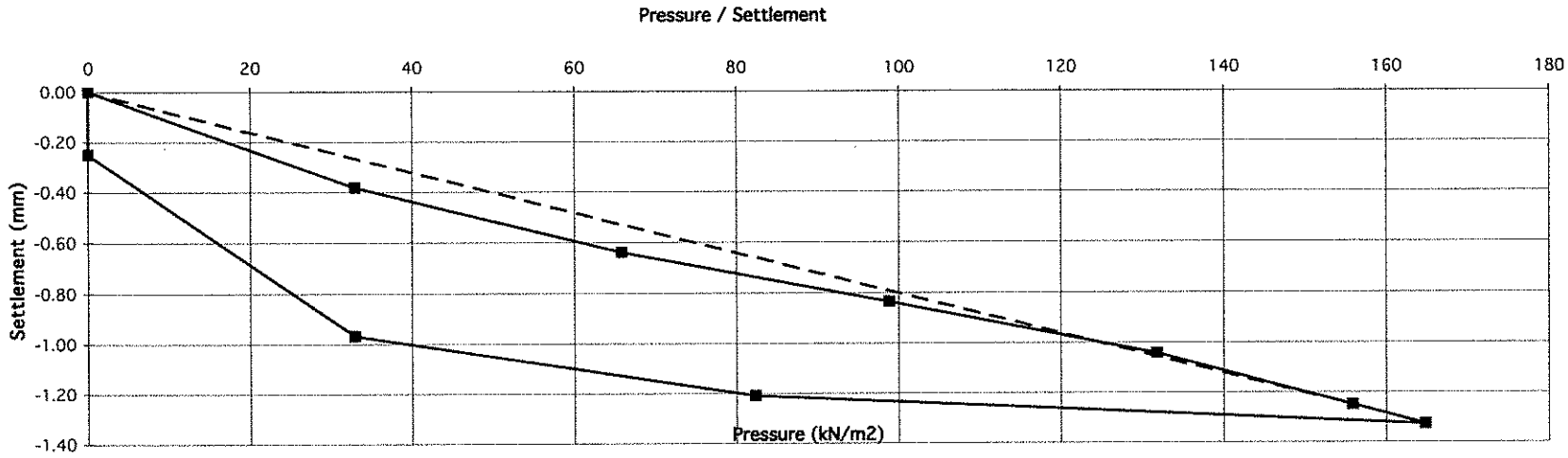
Reference No.	R92222
Contract	Beech House, Scholarstown
Test No.	PBT 13 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test (natural soil, placed fill, sub-base)

Brown very sandy gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)

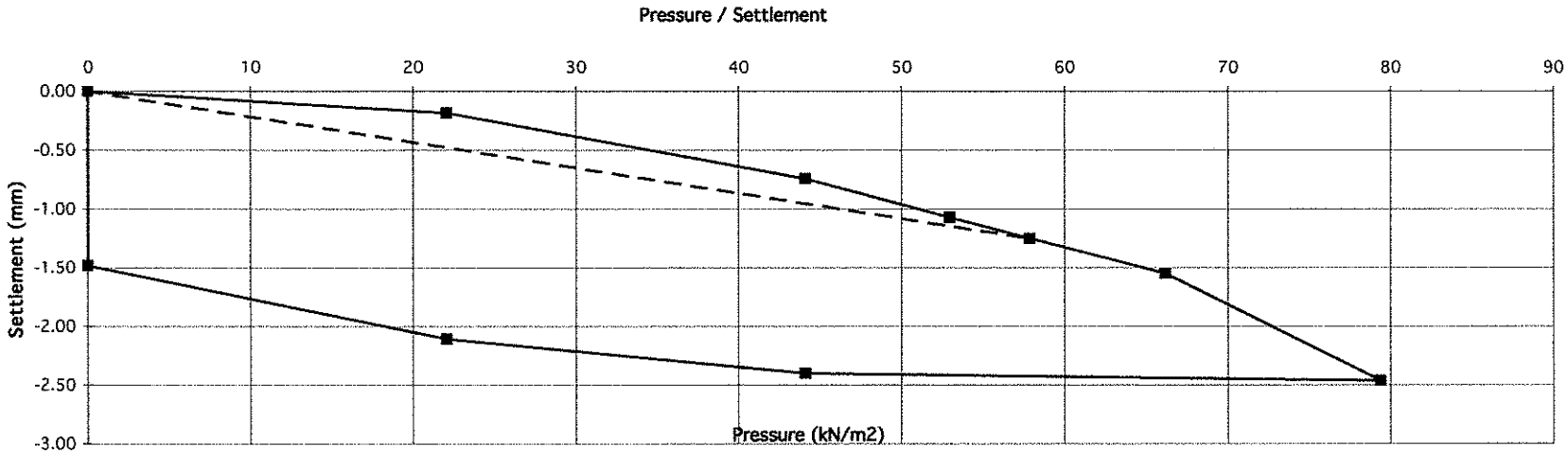
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 125
Modulus of subgrade reaction = 80 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 19.2 %

PLATE TEST REPORT SHEET (F3.1)		Applied Pressure/Settlement Curve	
Reference No.	R92266		
Contract	Beech House, Scholarstown	Description of soil under test (natural soil, placed fill, sub-base)	
Test No.	PBT 14 Load	Light brown sandy SILT with rare gravel	
Location	Scholarstown, Co. Dublin		
Depth	0.40mbgl	Easting (m)	
Client	DBFL Consulting Engineers	Northing (m)	
Plate Diameter:	450 mm	Ground Level (mOD)	
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test	Sample Ref No. N/A	
Technician	K. Kinsella	Depth 0.00 m bgl	
Authorised by			
Date	13/8/18		



Gradient at 1.25 mm settlement intersection = 46
Modulus of subgrade reaction = 30 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 3.5 %

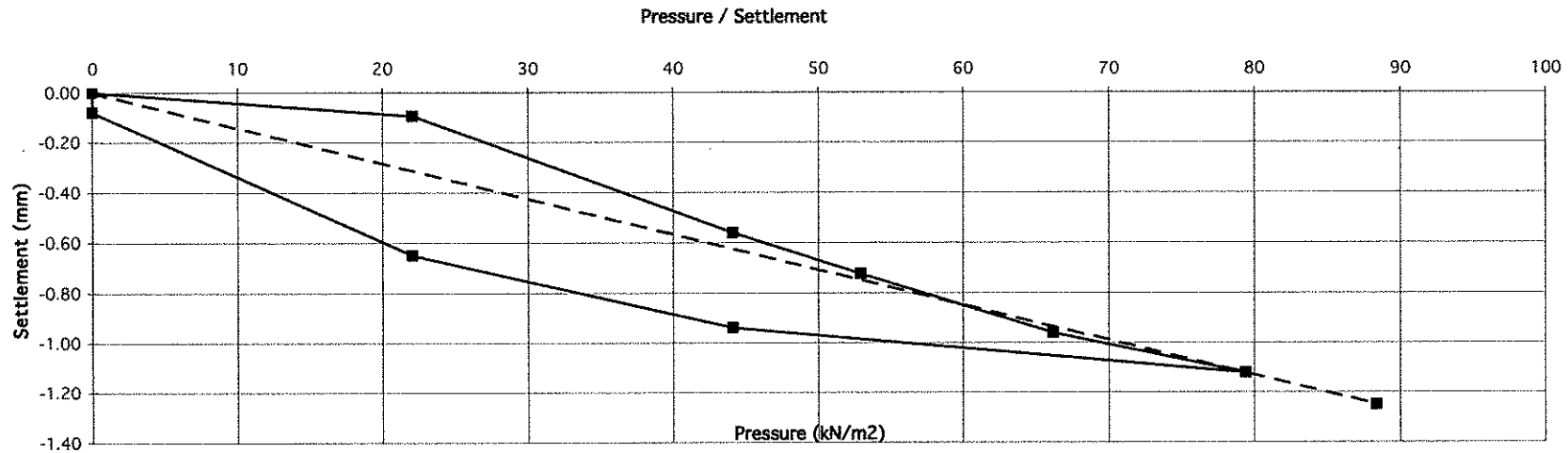
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92266
Contract	Beech House, Scholarstown
Test No.	PBT 14 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.40mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	13/8/18

Description of soil under test
(natural soil, placed fill, sub-base)
Light brown sandy SILT with rare gravel

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 71
Modulus of subgrade reaction = 45 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 7.2 %

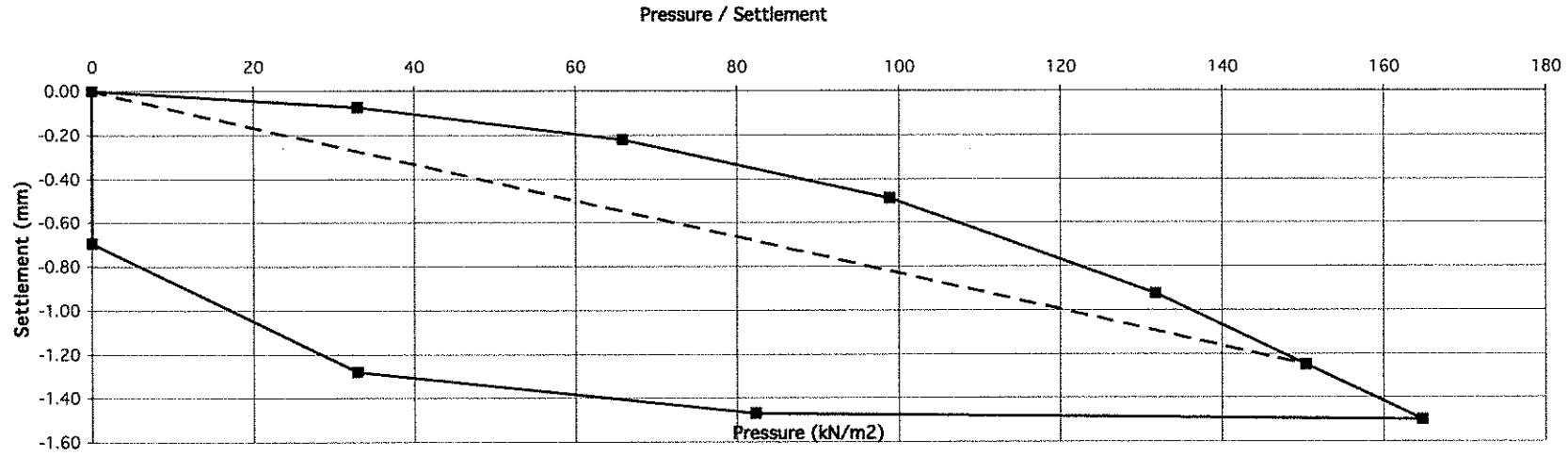
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92223
Contract	Beech House, Scholarstown
Test No.	PBT 15 Load
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown sandy slightly gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 120
Modulus of subgrade reaction = 77 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 18.1 %

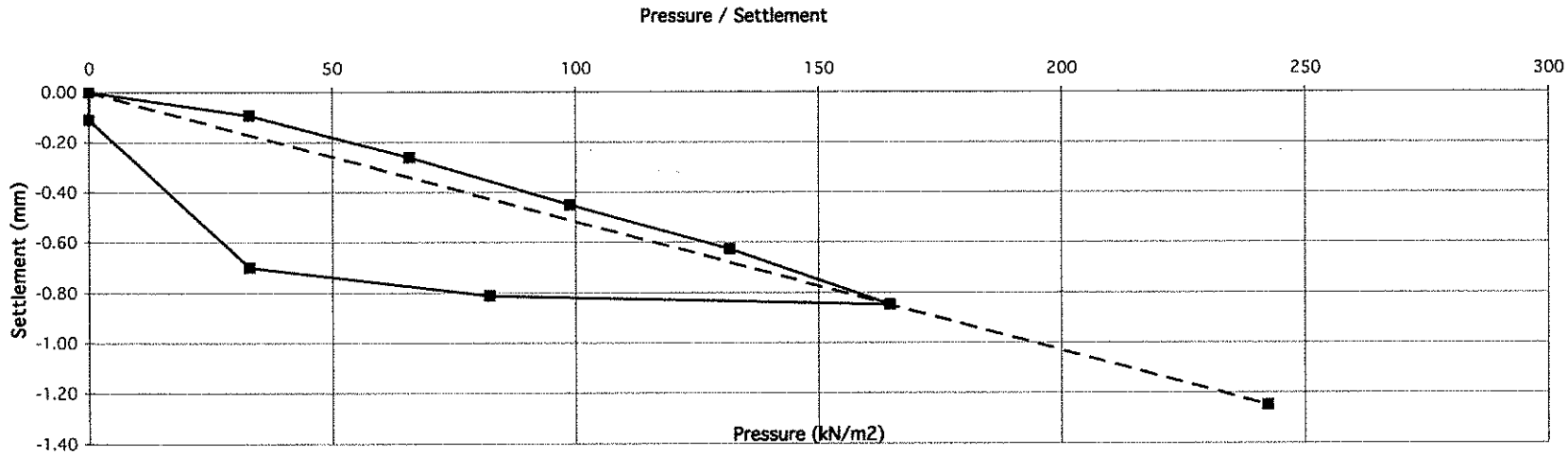
PLATE TEST REPORT SHEET (F3.1)

Applied Pressure/Settlement Curve

Reference No.	R92223
Contract	Beech House, Scholarstown
Test No.	PBT 15 ReLoad
Location	Scholarstown, Co. Dublin
Depth	0.50mbgl
Client	DBFL Consulting Engineers
Plate Diameter:	450 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	K. Kinsella
Authorised by	
Date	08/10/2018

Description of soil under test
(natural soil, placed fill, sub-base)
Brown sandy slightly gravelly SILT

Easting (m)
Northing (m)
Ground Level (mOD)
Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 194
Modulus of subgrade reaction = 125 MPa/m
Correction factor applied = 0.64 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 41.3 %

Appendix IV Dynamic Probes

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP01
		SHEET	Sheet 1 of 2
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	13
						0.10	19
						0.20	21
						0.30	25
						0.40	3
						0.50	12
						0.60	19
						0.70	18
						0.80	18
						0.90	14
1.0						1.00	17
						1.10	10
						1.20	6
						1.30	6
						1.40	11
						1.50	11
						1.60	8
						1.70	8
						1.80	7
						1.90	8
2.0						2.00	7
						2.10	11
						2.20	9
						2.30	7
						2.40	8
						2.50	7
						2.60	7
						2.70	7
						2.80	7
						2.90	8
3.0						3.00	10
						3.10	8
						3.20	7
						3.30	6
						3.40	7
						3.50	8
						3.60	9
						3.70	8
						3.80	8
						3.90	7
4.0						4.00	7
						4.10	8
						4.20	8
						4.30	7
						4.40	7
						4.50	10
						4.60	9
						4.70	10
						4.80	8
						4.90	8

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT Beech House, Scholarstown

PROBE NO. DP01

SHEET Sheet 2 of 2

CO-ORDINATES

GROUND LEVEL (mOD)

HAMMER MASS (kg) 50

INCREMENT SIZE (mm) 100

FALL HEIGHT (mm) 500

DATE DRILLED 09/08/2018

DATE LOGGED 09/08/2018

CLIENT

ENGINEER DBFL Consulting Engineers

PROBE TYPE DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
5.0	. *(continued)*					5.00	7
						5.10	7
						5.20	6
						5.30	8
						5.40	8
						5.50	7
						5.60	9
						5.70	9
						5.80	8
						5.90	7
6.0						6.00	6
						6.10	5
						6.20	6
						6.30	6
						6.40	6
						6.50	6
						6.60	7
						6.70	8
						6.80	7
						6.90	6
7.0						7.00	7
						7.10	10
						7.20	8
						7.30	9
						7.40	9
						7.50	10
						7.60	10
						7.70	11
						7.80	12
						7.90	13
8.0	End of Probe at 8.00 m						
9.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

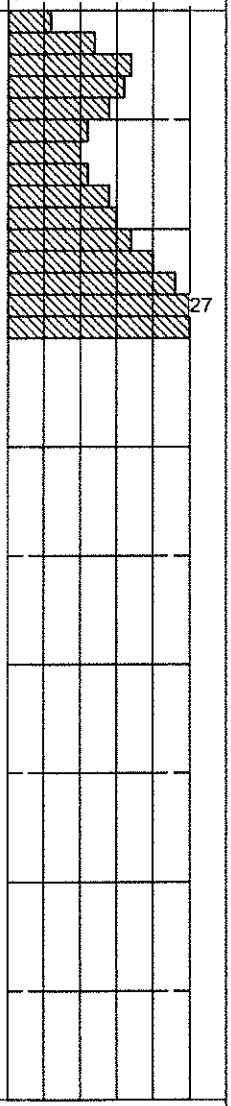
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP02
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	6
						0.10	12
						0.20	17
						0.30	16
						0.40	14
						0.50	11
						0.60	10
						0.70	11
						0.80	14
						0.90	15
1.0						1.00	17
						1.10	20
						1.20	23
						1.30	27
						1.40	25
	End of Probe at 1.50 m						
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP03
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	3
						0.10	11
						0.20	16
						0.30	17
						0.40	16
						0.50	13
						0.60	9
						0.70	6
						0.80	7
						0.90	7
1.0						1.00	8
						1.10	9
						1.20	9
						1.30	7
						1.40	7
						1.50	6
						1.60	8
						1.70	14
						1.80	24
						1.90	25
2.0	End of Probe at 2.00 m						
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

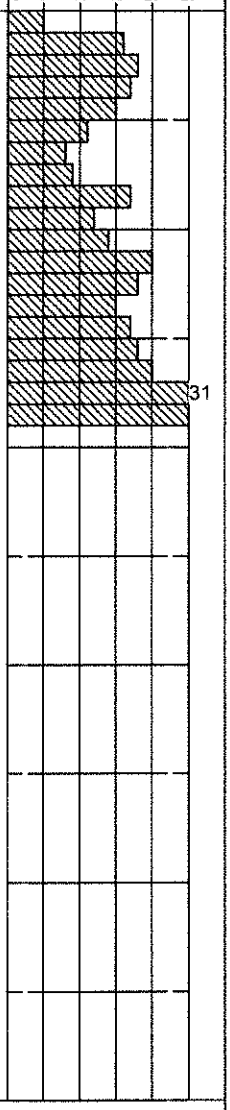
REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP04
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description
0.0	.
1.0	
	End of Probe at 1.90 m
2.0	
3.0	
4.0	

Depth (m)	Probe Readings (Blows/Increment)
0.00	5
0.10	16
0.20	18
0.30	17
0.40	15
0.50	11
0.60	8
0.70	9
0.80	17
0.90	12
1.00	14
1.10	20
1.20	18
1.30	15
1.40	17
1.50	18
1.60	20
1.70	31
1.80	25

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP05
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	7
						0.10	15
						0.20	23
						0.30	24
						0.40	21
						0.50	20
						0.60	23
						0.70	27
						0.80	25
	End of Probe at 0.90 m						
1.0							
2.0							
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25; 27

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP06
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	7
						0.10	17
						0.20	24
						0.30	25
						0.40	20
						0.50	16
						0.60	11
						0.70	5
						0.80	4
						0.90	4
1.0						1.00	3
						1.10	3
						1.20	2
						1.30	2
						1.40	14
						1.50	16
						1.60	19
						1.70	12
						1.80	6
						1.90	4
2.0						2.00	3
						2.10	3
						2.20	2
						2.30	9
						2.40	5
						2.50	5
						2.60	7
						2.70	7
						2.80	25
						2.90	22
3.0						3.00	23
						3.10	25
	End of Probe at 3.20 m						
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

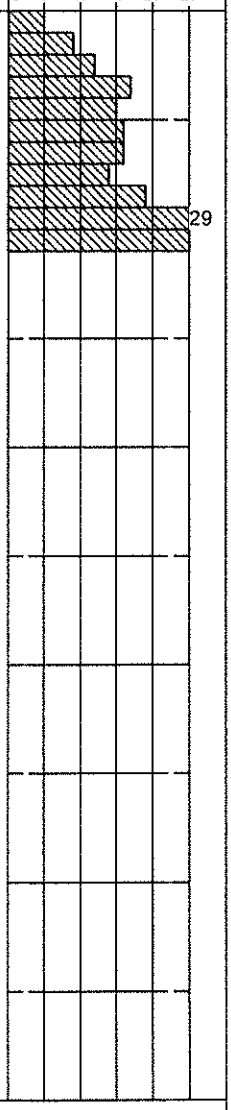
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP07
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	5
						0.10	9
						0.20	12
						0.30	17
						0.40	15
						0.50	16
						0.60	16
						0.70	14
						0.80	19
						0.90	29
1.0						1.00	25
	End of Probe at 1.10 m						
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

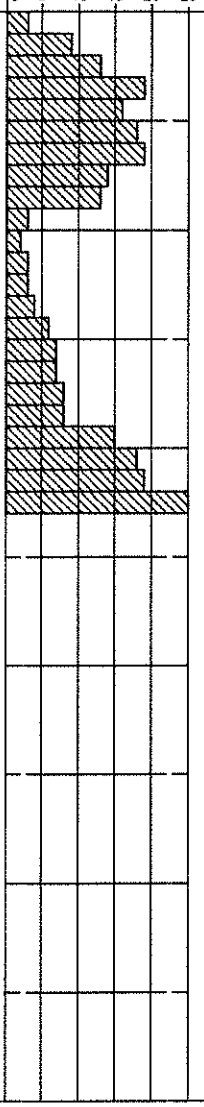
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP08
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	3
						0.10	9
						0.20	13
						0.30	19
						0.40	16
						0.50	18
						0.60	19
						0.70	14
						0.80	13
						0.90	3
1.0						1.00	2
						1.10	3
						1.20	3
						1.30	4
						1.40	6
						1.50	7
						1.60	7
						1.70	8
						1.80	8
						1.90	15
2.0						2.00	18
						2.10	19
						2.20	25
	End of Probe at 2.30 m						
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP09
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100	PROBE TYPE	DPH
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500		

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record (0 5 10 15 20 25)
0.0	.					0.00	5	
						0.10	9	
						0.20	16	
						0.30	18	
						0.40	15	
						0.50	17	
						0.60	15	
						0.70	14	
						0.80	9	
						0.90	9	
1.0						1.00	9	
						1.10	10	
						1.20	11	
						1.30	7	
						1.40	14	
						1.50	22	
						1.60	19	
						1.70	20	
						1.80	22	
						1.90	23	
2.0						2.00	25	
	End of Probe at 2.10 m							
3.0								
4.0								

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP10
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100	PROBE TYPE	DPH
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500		

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	5
						0.10	7
						0.20	8
						0.30	11
						0.40	12
						0.50	22
						0.60	19
						0.70	11
						0.80	7
						0.90	10
1.0						1.00	16
						1.10	13
						1.20	10
						1.30	10
						1.40	13
						1.50	16
						1.60	23
						1.70	29
						1.80	25
	End of Probe at 1.90 m						
2.0							
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25; 29

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

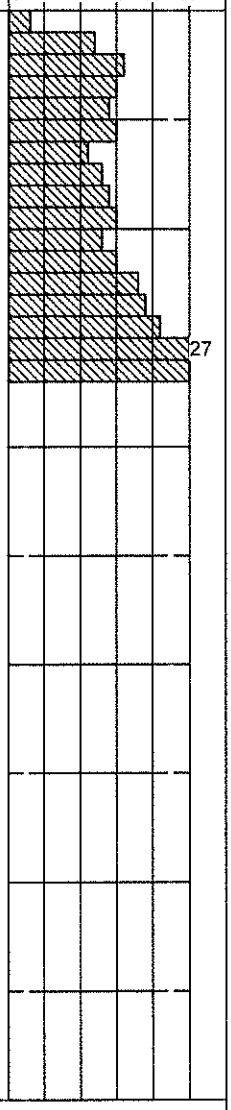
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP11
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	3
						0.10	12
						0.20	16
						0.30	15
						0.40	14
						0.50	15
						0.60	11
						0.70	13
						0.80	14
						0.90	15
1.0						1.00	13
						1.10	15
						1.20	18
						1.30	19
						1.40	21
						1.50	27
						1.60	25
	End of Probe at 1.70 m						
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP12
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	4
						0.10	10
						0.20	12
						0.30	15
						0.40	14
						0.50	10
						0.60	8
						0.70	7
						0.80	6
						0.90	7
1.0						1.00	7
						1.10	9
						1.20	10
						1.30	8
						1.40	7
						1.50	12
						1.60	19
						1.70	24
						1.80	25
	End of Probe at 1.90 m						
2.0							
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

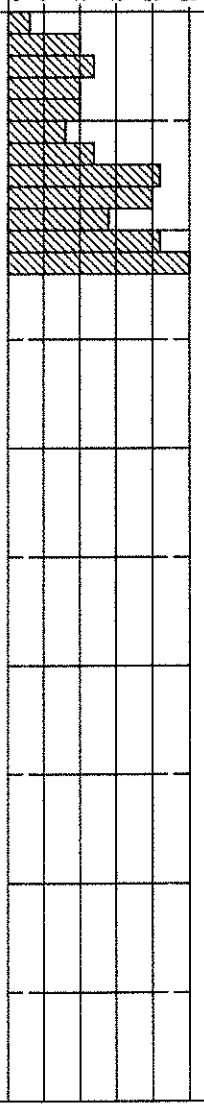
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP13
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	3
						0.10	10
						0.20	12
						0.30	10
						0.40	10
						0.50	8
						0.60	12
						0.70	21
						0.80	20
						0.90	14
1.0						1.00	21
	End of Probe at 1.20 m					1.10	25
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP14
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	3
						0.10	9
						0.20	14
						0.30	12
						0.40	9
						0.50	9
						0.60	7
						0.70	5
						0.80	5
						0.90	7
1.0						1.00	15
						1.10	12
						1.20	5
						1.30	8
						1.40	8
						1.50	18
						1.60	21
						1.70	23
						1.80	25
2.0	End of Probe at 1.90 m						
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

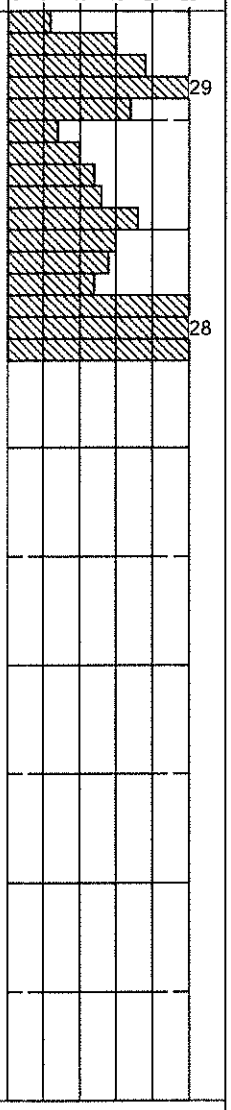
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP15
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	6
						0.10	15
						0.20	19
						0.30	29
						0.40	17
						0.50	7
						0.60	10
						0.70	12
						0.80	13
						0.90	18
1.0						1.00	15
						1.10	14
						1.20	12
						1.30	25
						1.40	28
						1.50	25
	End of Probe at 1.60 m						
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

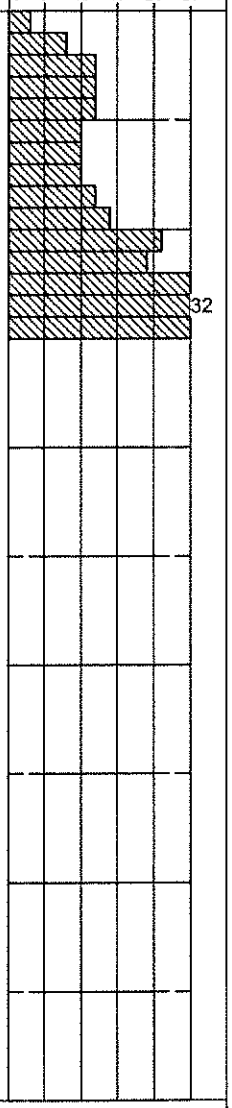
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP16
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100	PROBE TYPE	DPH
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500		

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	3
						0.10	8
						0.20	12
						0.30	12
						0.40	12
						0.50	10
						0.60	10
						0.70	10
						0.80	12
						0.90	14
1.0						1.00	21
						1.10	19
						1.20	25
						1.30	32
						1.40	25
	End of Probe at 1.50 m						
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP17
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100	PROBE TYPE	DPH
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500		

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	4
						0.10	10
						0.20	11
						0.30	15
						0.40	17
						0.50	12
						0.60	8
						0.70	6
						0.80	8
						0.90	12
1.0						1.00	26
						1.10	26
						1.20	16
						1.30	14
						1.40	20
						1.50	25
	End of Probe at 1.60 m						
2.0							
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

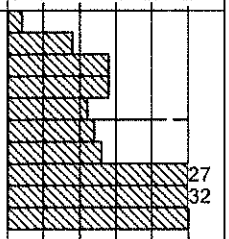
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP18
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	2
						0.10	9
						0.20	14
						0.30	14
						0.40	11
						0.50	12
						0.60	13
						0.70	27
						0.80	32
						0.90	25
1.0	End of Probe at 1.00 m						
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

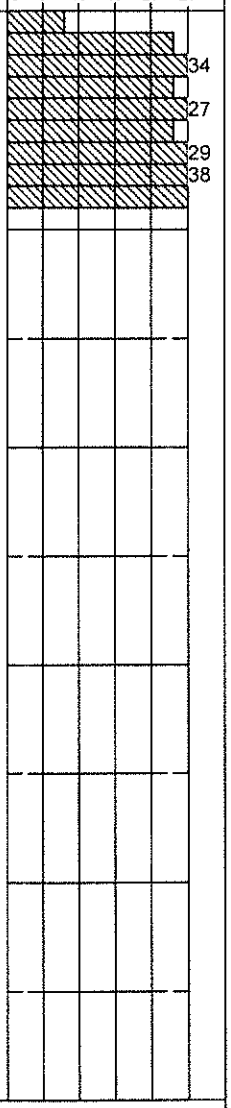
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP19
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	8
						0.10	23
						0.20	34
						0.30	23
						0.40	27
						0.50	23
						0.60	29
						0.70	38
						0.80	25
	End of Probe at 0.90 m						
1.0							
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP20
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0	.					0.00	4
						0.10	8
						0.20	14
						0.30	14
						0.40	15
						0.50	11
						0.60	8
						0.70	6
						0.80	5
						0.90	3
1.0						1.00	13
						1.10	10
						1.20	11
						1.30	14
						1.40	22
						1.50	25
	End of Probe at 1.60 m						
2.0							
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

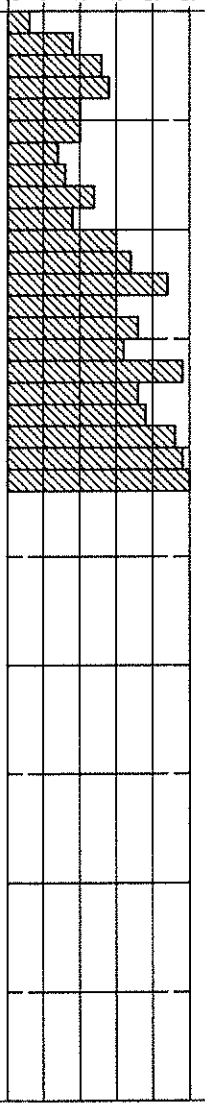
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP21
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	3
						0.10	9
						0.20	13
						0.30	14
						0.40	10
						0.50	10
						0.60	7
						0.70	8
						0.80	12
						0.90	9
1.0						1.00	15
						1.10	17
						1.20	22
						1.30	15
						1.40	18
						1.50	16
						1.60	24
						1.70	18
						1.80	19
						1.90	23
2.0						2.00	24
						2.10	25
	End of Probe at 2.20 m						
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP22
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record (0 5 10 15 20 25)
0.0	.					0.00	7	
						0.10	19	
						0.20	21	
						0.30	20	
						0.40	17	
						0.50	19	
						0.60	17	
						0.70	19	
						0.80	26	26
1.0	End of Probe at 1.00 m					0.90	25	
2.0								
3.0								
4.0								

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP23
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	3
						0.10	10
						0.20	15
						0.30	9
						0.40	9
						0.50	7
						0.60	9
						0.70	8
						0.80	5
						0.90	3
1.0						1.00	2
						1.10	2
						1.20	3
						1.30	4
						1.40	3
						1.50	3
						1.60	2
						1.70	1
						1.80	1
						1.90	2
2.0						2.00	2
						2.10	3
						2.20	5
						2.30	11
						2.40	13
						2.50	20
						2.60	21
						2.70	22
						2.80	21
						2.90	24
3.0						3.00	25
	End of Probe at 3.10 m						
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP24
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	4
						0.10	8
						0.20	12
						0.30	10
						0.40	8
						0.50	7
						0.60	8
						0.70	8
						0.80	6
						0.90	4
1.0						1.00	5
						1.10	8
						1.20	9
						1.30	10
						1.40	12
						1.50	18
						1.60	21
						1.70	25
	End of Probe at 1.80 m						
2.0							
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP25
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record
0.0	.					0.00	2	
						0.10	12	
						0.20	16	
						0.30	16	
						0.40	14	
						0.50	12	
						0.60	20	
						0.70	38	38
						0.80	25	
	End of Probe at 0.90 m							
1.0								
2.0								
3.0								
4.0								

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP26
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	10/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	10/08/2018
CLIENT	INCREMENT SIZE (mm) 100	PROBE TYPE	DPH
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500		

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record (0 5 10 15 20 25)
0.0						0.00	3	
						0.10	9	
						0.20	16	
						0.30	19	
						0.40	18	
						0.50	17	
						0.60	29	29
						0.70	39	39
						0.80	25	
	End of Probe at 0.90 m							
1.0								
2.0								
3.0								
4.0								

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT Beech House, Scholarstown

PROBE NO. DP27

SHEET Sheet 1 of 1

CO-ORDINATES

GROUND LEVEL (mOD)

HAMMER MASS (kg) 50

INCREMENT SIZE (mm) 100

FALL HEIGHT (mm) 500

DATE DRILLED 10/08/2018

DATE LOGGED 10/08/2018

CLIENT

ENGINEER DBFL Consulting Engineers

PROBE TYPE DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	3
						0.10	7
						0.20	14
						0.30	17
						0.40	12
						0.50	26
						0.60	29
						0.70	25
	End of Probe at 0.80 m						
1.0							
2.0							
3.0							
4.0							

Graphic Probe Record

0 5 10 15 20 25

26

29

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

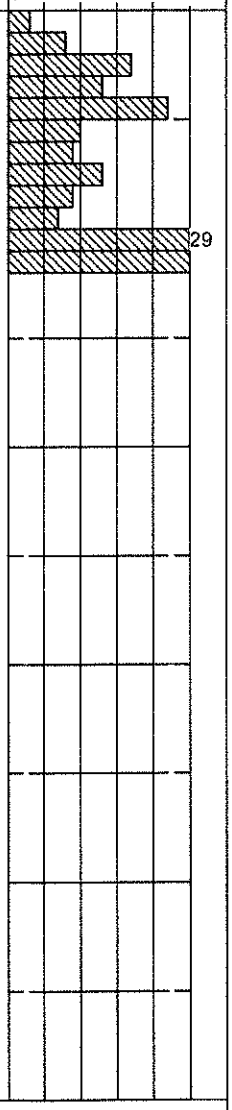
DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP28
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100	PROBE TYPE	DPH
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500		

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	3
						0.10	8
						0.20	17
						0.30	13
						0.40	22
						0.50	10
						0.60	9
						0.70	13
						0.80	9
						0.90	7
1.0						1.00	29
	End of Probe at 1.20 m					1.10	25
2.0							
3.0							
4.0							

Graphic Probe Record



GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP29
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100	PROBE TYPE	DPH
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500		

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)
0.0						0.00	4
						0.10	8
						0.20	13
						0.30	14
						0.40	13
						0.50	12
						0.60	8
						0.70	7
						0.80	5
						0.90	3
1.0						1.00	4
						1.10	4
						1.20	3
						1.30	5
						1.40	5
						1.50	5
						1.60	6
						1.70	7
						1.80	13
						1.90	6
2.0						2.00	26
						2.10	17
						2.20	6
						2.30	15
						2.40	22
						2.50	25
						2.60	25
	End of Probe at 2.70 m						
3.0							
4.0							

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

DYNAMIC PROBE RECORD

REPORT NUMBER 21167

CONTRACT	Beech House, Scholarstown	PROBE NO.	DP30
		SHEET	Sheet 1 of 1
CO-ORDINATES		DATE DRILLED	09/08/2018
GROUND LEVEL (mOD)	HAMMER MASS (kg) 50	DATE LOGGED	09/08/2018
CLIENT	INCREMENT SIZE (mm) 100		
ENGINEER DBFL Consulting Engineers	FALL HEIGHT (mm) 500	PROBE TYPE	DPH

Depth (m)	Geotechnical Description	Legend	Depth (m)	Elevation (mOD)	Water	Depth (m)	Probe Readings (Blows/Increment)	Graphic Probe Record
0.0	.					0.00	5	
						0.10	9	
						0.20	12	
						0.30	13	
						0.40	10	
						0.50	10	
						0.60	26	26
						0.70	19	
						0.80	19	
						0.90	14	
1.0						1.00	23	
						1.10	24	
						1.20	19	
						1.30	23	
						1.40	28	28
						1.50	25	
	End of Probe at 1.60 m							
2.0								
3.0								
4.0								

Graphic Probe Record: 0 5 10 15 20 25

GROUNDWATER OBSERVATIONS

REMARKS

IGSL DP LOG 100MM INCREMENTS 21167.GPJ IGSL.GDT 14/8/18

Appendix V BRE Digest 365 Tests

Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown
Contract No. 21167
Test No. IT01 (1st cycle)
712569.377
Engineer DBFL Consulting Engineers
726990.853
Date: 09.08.2018
79.908

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL with rootlets	No water
0.20	0.70	Stiff light brown sandy slightly gravelly SILT with occasional cobbles	
0.70	2.00	Stiff to firm brown sandy slightly gravelly cobbly SILT	

Field Data

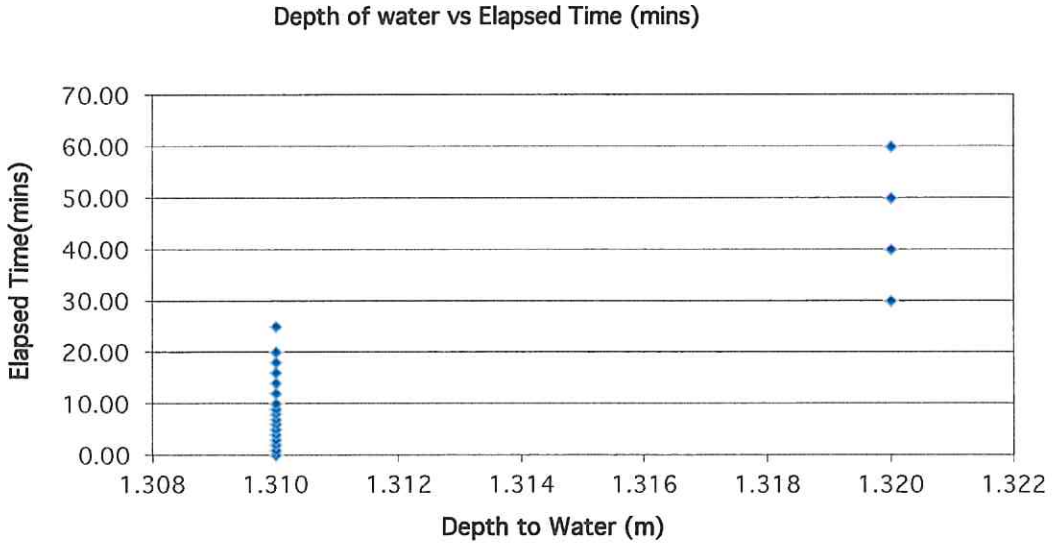
Depth to Water (m)	Elapsed Time (min)
1.310	0.00
1.310	1.00
1.310	2.00
1.310	3.00
1.310	4.00
1.310	5.00
1.310	6.00
1.310	7.00
1.310	8.00
1.310	9.00
1.310	10.00
1.310	12.00
1.310	14.00
1.310	16.00
1.310	18.00
1.310	20.00
1.310	25.00
1.320	30.00
1.320	40.00
1.320	50.00
1.320	60.00

Field Test

Depth of Pit (D)	2.00	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.60	m
Initial depth to Water =	1.31	m
Final depth to water =	1.320	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.96	m2
*Av. side area of permeable stratum over test period=	3.014	m2
Total Exposed area =	3.974	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 4E-05 m/min or 6.71028E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract:	Beech House, Scholarstown	Contract No.	21167
Test No.	IT01 (2nd cycle)		712569.377
Engineer	DBFL Consulting Engineers		726990.853
Date:	09.08.2018		79.908

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL with rootlets	No water
0.20	0.70	Stiff light brown sandy slightly gravelly SILT with occasional cobbles	
0.70	2.00	Stiff to firm brown sandy slightly gravelly cobbly SILT	

Field Data

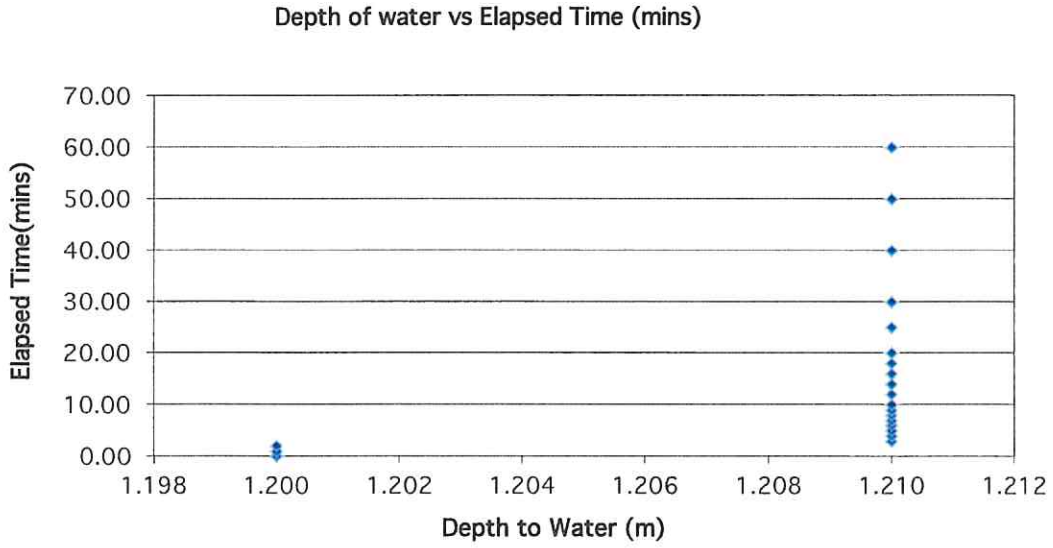
Depth to Water (m)	Elapsed Time (min)
1.200	0.00
1.200	1.00
1.200	2.00
1.210	3.00
1.210	4.00
1.210	5.00
1.210	6.00
1.210	7.00
1.210	8.00
1.210	9.00
1.210	10.00
1.210	12.00
1.210	14.00
1.210	16.00
1.210	18.00
1.210	20.00
1.210	25.00
1.210	30.00
1.210	40.00
1.210	50.00
1.210	60.00

Field Test

Depth of Pit (D)	2.00	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.60	m
Initial depth to Water =	1.20	m
Final depth to water =	1.210	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.96	m2
*Av. side area of permeable stratum over test period=	3.498	m2
Total Exposed area =	4.458	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 3.6E-05 m/min or 5.98176E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown — Contract No. 21167
Test No. IT02 (1st cycle) — 712550.476
Engineer DBFL Consulting Engineers — 726992.458
Date: 09.08.2018 — 80.112

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL with rootlets	No water
0.20	0.70	Stiff light brown sandy slightly gravelly SILT with occasional cobbles	
0.70	1.80	Firm to stiff brown sandy slightly gravelly SILT with occasional cobbles	

Field Data

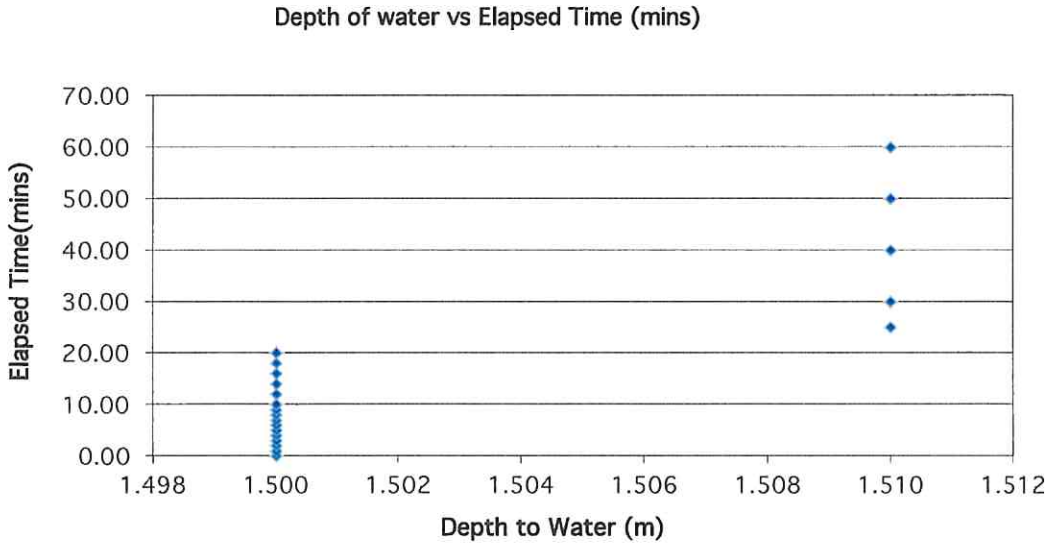
Depth to Water (m)	Elapsed Time (min)
1.500	0.00
1.500	1.00
1.500	2.00
1.500	3.00
1.500	4.00
1.500	5.00
1.500	6.00
1.500	7.00
1.500	8.00
1.500	9.00
1.500	10.00
1.500	12.00
1.500	14.00
1.500	16.00
1.500	18.00
1.500	20.00
1.510	25.00
1.510	30.00
1.510	40.00
1.510	50.00
1.510	60.00

Field Test

Depth of Pit (D)	1.80	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.50	m
Final depth to water =	1.510	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	1.239	m2
Total Exposed area =	2.139	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 7E-05 m/min or 1.16877E-06 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown
Contract No. 21167
Test No. IT02 (2nd cycle)
712550.476
Engineer DBFL Consulting Engineers
726992.458
Date: 09.08.2018
80.112

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL with rootlets	No water
0.20	0.70	Stiff light brown sandy slightly gravelly SILT with occasional cobbles	
0.70	1.80	Firm to stiff brown sandy slightly gravelly SILT with occasional cobbles	

Field Data

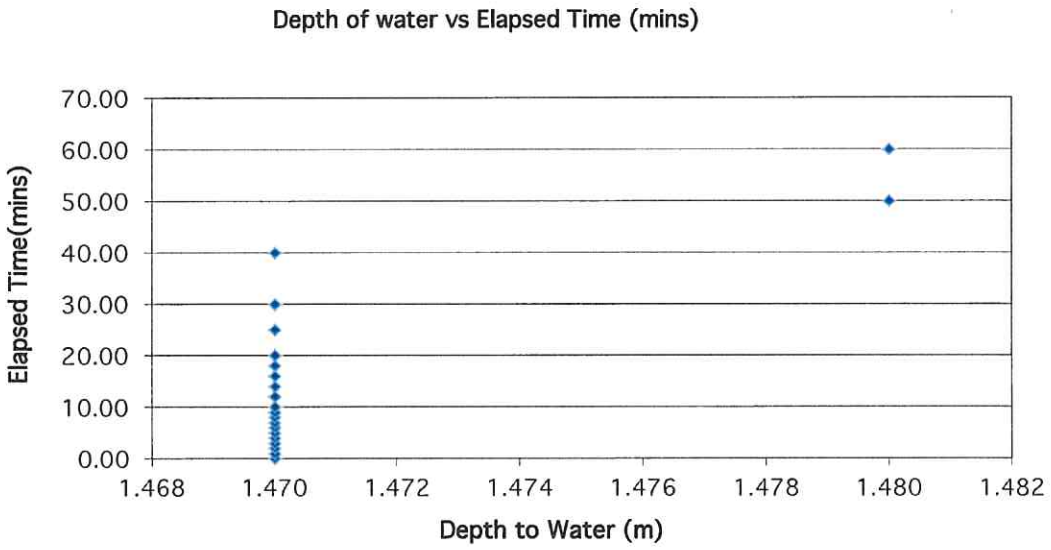
Depth to Water (m)	Elapsed Time (min)
1.470	0.00
1.470	1.00
1.470	2.00
1.470	3.00
1.470	4.00
1.470	5.00
1.470	6.00
1.470	7.00
1.470	8.00
1.470	9.00
1.470	10.00
1.470	12.00
1.470	14.00
1.470	16.00
1.470	18.00
1.470	20.00
1.470	25.00
1.470	30.00
1.470	40.00
1.480	50.00
1.480	60.00

Field Test

Depth of Pit (D)	1.80	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.47	m
Final depth to water =	1.480	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	1.365	m2
Total Exposed area =	2.265	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 6.6E-05 m/min or 1.10375E-06 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown — Contract No. 21167
Test No. IT03 (1st cycle) — 712484.337
Engineer DBFL Consulting Engineers — 726902.736
Date: 09.08.2018 — 83.542

Summary of ground conditions

from	to	Description	Ground water
0.00	0.15	Firm brown TOPSOIL with rootlets	No water
0.15	0.80	Stiff light brown sandy SILT with occasional gravel and rare cobbles	
0.80	1.75	Stiff brown sandy gravelly cobbly SILT	

Field Data

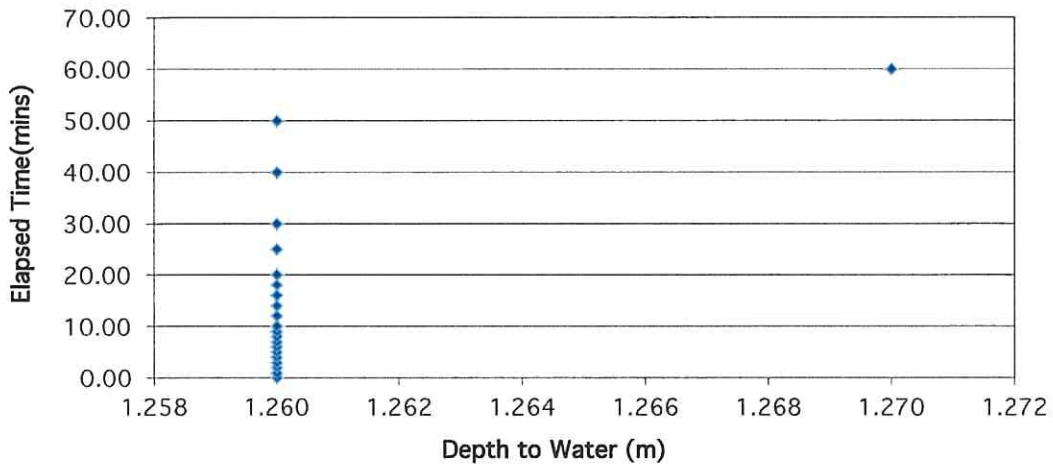
Depth to Water (m)	Elapsed Time (min)
1.260	0.00
1.260	1.00
1.260	2.00
1.260	3.00
1.260	4.00
1.260	5.00
1.260	6.00
1.260	7.00
1.260	8.00
1.260	9.00
1.260	10.00
1.260	12.00
1.260	14.00
1.260	16.00
1.260	18.00
1.260	20.00
1.260	25.00
1.260	30.00
1.260	40.00
1.260	50.00
1.270	60.00

Field Test

Depth of Pit (D)	1.75	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.26	m
Final depth to water =	1.270	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	2.037	m2
Total Exposed area =	2.937	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 5.1E-05 m/min or 8.51209E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown
Contract No. 21167
Test No. IT03 (2nd cycle)
712484.337
Engineer DBFL Consulting Engineers
726902.736
Date: 09.08.2018
83.542

Summary of ground conditions

from	to	Description	Ground water
0.00	0.15	Firm brown TOPSOIL with rootlets	No water
0.15	0.80	Stiff light brown sandy SILT with occasional gravel and rare cobbles	
0.80	1.75	Stiff brown sandy gravelly cobbly SILT	

Field Data

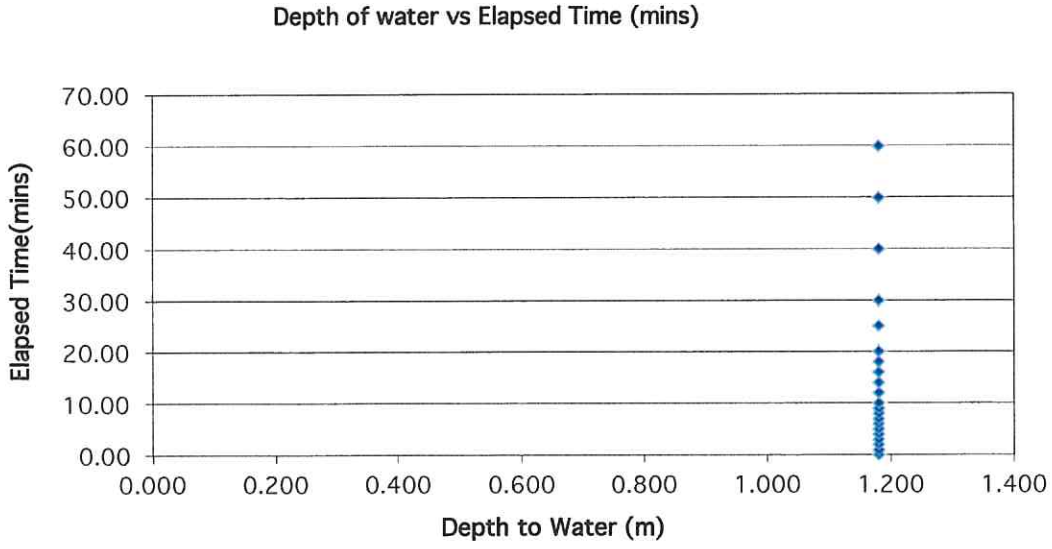
Depth to Water (m)	Elapsed Time (min)
1.180	0.00
1.180	1.00
1.180	2.00
1.180	3.00
1.180	4.00
1.180	5.00
1.180	6.00
1.180	7.00
1.180	8.00
1.180	9.00
1.180	10.00
1.180	12.00
1.180	14.00
1.180	16.00
1.180	18.00
1.180	20.00
1.180	25.00
1.180	30.00
1.180	40.00
1.180	50.00
1.180	60.00

Field Test

Depth of Pit (D)	1.75	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.18	m
Final depth to water =	1.180	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	2.394	m2
Total Exposed area =	3.294	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown
Contract No. 21167
Test No. IT04 (1st cycle)
712556.069
Engineer DBFL Consulting Engineers
726812.607
Date: 09.08.2018
83.836

Summary of ground conditions

from	to	Description	Ground water
0.00	0.15	Firm brown TOPSOIL with rootlets	No water
0.15	0.80	Stiff light brown sandy slightly gravelly SILT with occasional cobbles	
0.80	1.75	Firm to stiff brown sandy gravelly cobbly SILT with rare boulders	

Field Data

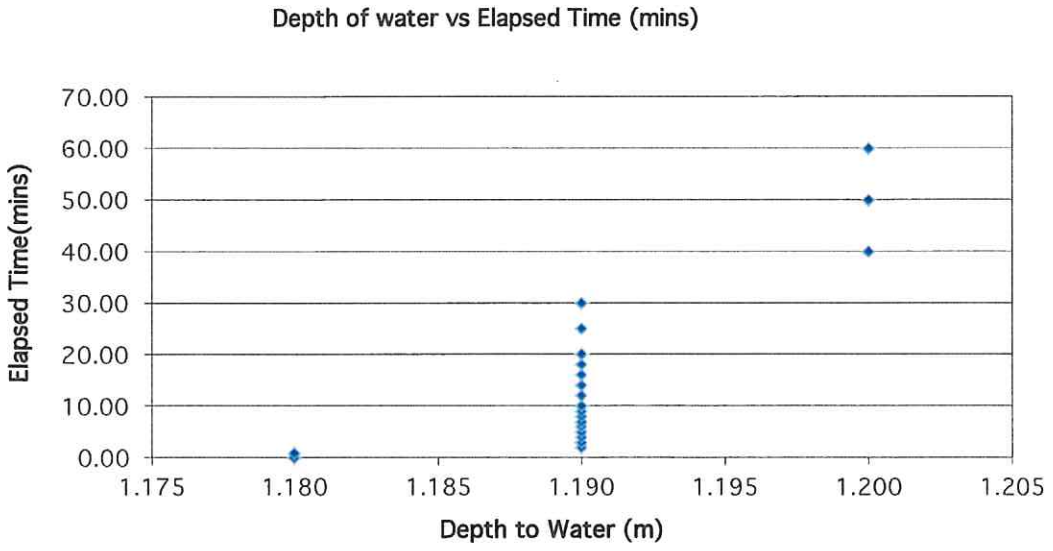
Depth to Water (m)	Elapsed Time (min)
1.180	0.00
1.180	1.00
1.190	2.00
1.190	3.00
1.190	4.00
1.190	5.00
1.190	6.00
1.190	7.00
1.190	8.00
1.190	9.00
1.190	10.00
1.190	12.00
1.190	14.00
1.190	16.00
1.190	18.00
1.190	20.00
1.190	25.00
1.190	30.00
1.200	40.00
1.200	50.00
1.200	60.00

Field Test

Depth of Pit (D)	1.75	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.18	m
Final depth to water =	1.200	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	2.352	m2
Total Exposed area =	3.252	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 9.2E-05 m/min or 1.53752E-06 m/sec



Soakaway Design f -value from field tests

IGSL

Contract:	Beech House, Scholarstown	Contract No.	21167
Test No.	IT04 (2nd cycle)		712556.069
Engineer	DBFL Consulting Engineers		726812.607
Date:	09.08.2018		83.836

Summary of ground conditions

from	to	Description	Ground water
0.00	0.15	Firm brown TOPSOIL with rootlets	No water
0.15	0.80	Stiff light brown sandy slightly gravelly SILT with occasional cobbles	
0.80	1.75	Firm to stiff brown sandy gravelly cobbly SILT with rare boulders	

Field Data

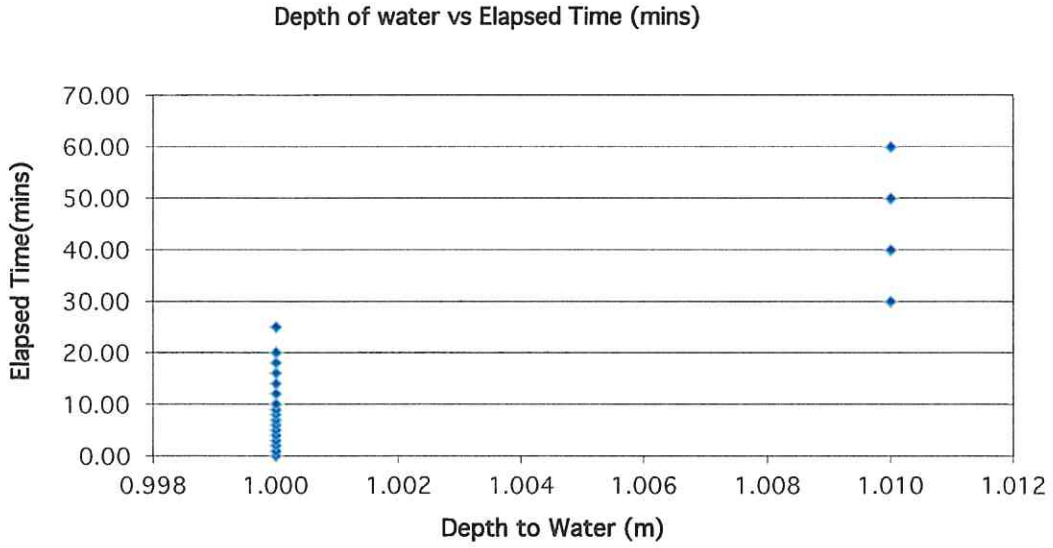
Depth to Water (m)	Elapsed Time (min)
1.000	0.00
1.000	1.00
1.000	2.00
1.000	3.00
1.000	4.00
1.000	5.00
1.000	6.00
1.000	7.00
1.000	8.00
1.000	9.00
1.000	10.00
1.000	12.00
1.000	14.00
1.000	16.00
1.000	18.00
1.000	20.00
1.000	25.00
1.010	30.00
1.010	40.00
1.010	50.00
1.010	60.00

Field Test

Depth of Pit (D)	1.75	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.00	m
Final depth to water =	1.010	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	3.129	m2
Total Exposed area =	4.029	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 3.7E-05 m/min or 6.20501E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown
Contract No. 21167
Test No. IT05 (1st cycle)
712484.706
Engineer DBFL Consulting Engineers
726923.714
Date: 09.08.2018
83.146

Summary of ground conditions

from	to	Description	Ground water
0.00	0.15	Firm brown TOPSOIL with roots and rootlets	No water
0.15	0.80	Stiff light brown sandy SILT with occasional gravel	
0.80	1.40	Stiff brown sandy gravelly slightly cobbly SILT	

Field Data

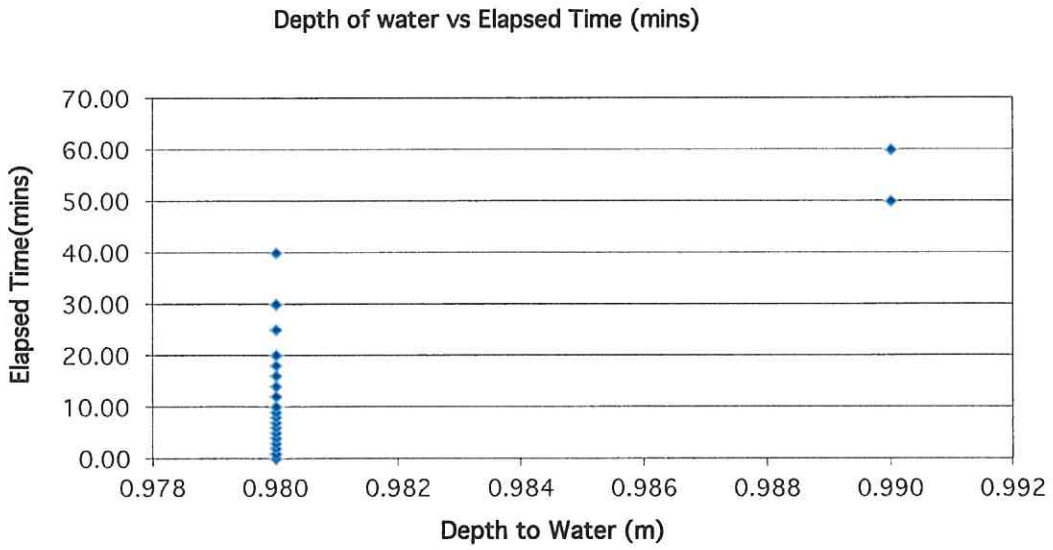
Depth to Water (m)	Elapsed Time (min)
0.980	0.00
0.980	1.00
0.980	2.00
0.980	3.00
0.980	4.00
0.980	5.00
0.980	6.00
0.980	7.00
0.980	8.00
0.980	9.00
0.980	10.00
0.980	12.00
0.980	14.00
0.980	16.00
0.980	18.00
0.980	20.00
0.980	25.00
0.980	30.00
0.980	40.00
0.990	50.00
0.990	60.00

Field Test

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	0.98	m
Final depth to water =	0.990	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	1.743	m2
Total Exposed area =	2.643	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 5.7E-05 m/min or 9.45895E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown
Contract No. 21167
Test No. IT05 (2nd cycle)
712484.706
Engineer DBFL Consulting Engineers
726923.714
Date: 09.08.2018
83.146

Summary of ground conditions

from	to	Description	Ground water
0.00	0.15	Firm brown TOPSOIL with roots and rootlets	No water
0.15	0.80	Stiff light brown sandy SILT with occasional gravel	
0.80	1.40	Stiff brown sandy gravelly slightly cobbly SILT	

Field Data

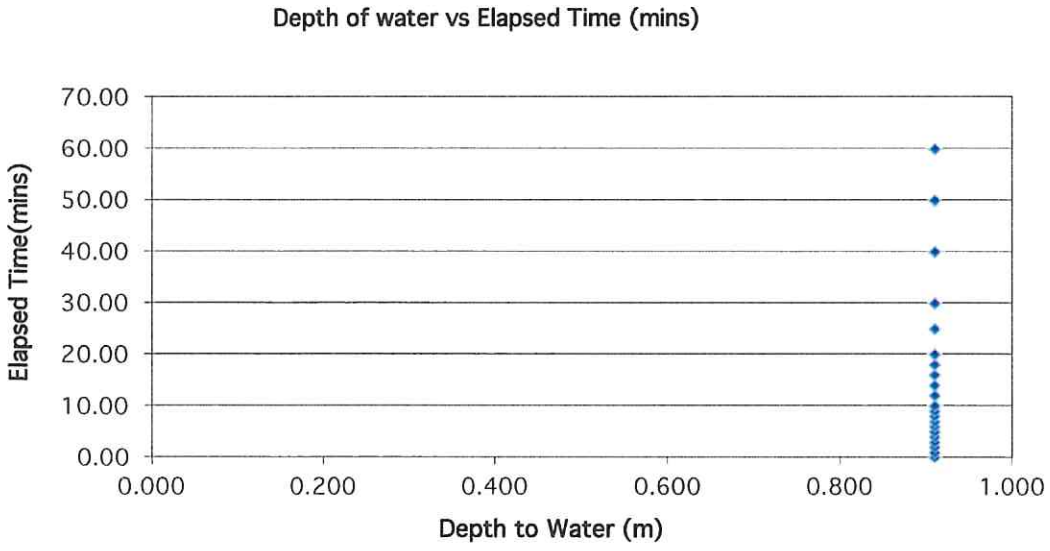
Depth to Water (m)	Elapsed Time (min)
0.910	0.00
0.910	1.00
0.910	2.00
0.910	3.00
0.910	4.00
0.910	5.00
0.910	6.00
0.910	7.00
0.910	8.00
0.910	9.00
0.910	10.00
0.910	12.00
0.910	14.00
0.910	16.00
0.910	18.00
0.910	20.00
0.910	25.00
0.910	30.00
0.910	40.00
0.910	50.00
0.910	60.00

Field Test

Depth of Pit (D)	1.40	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	0.91	m
Final depth to water =	0.910	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	2.058	m2
Total Exposed area =	2.958	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown — Contract No. 21167
Test No. IT06 (1st cycle) — 712368.625
Engineer DBFL Consulting Engineers — 726851.292
Date: 10.08.2018 — 86.117

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL with rootlets	No water
0.20	0.65	Stiff light brown sandy SILT with occasional gravel	
0.80	1.75	Stiff brown/light greyish brown sandy gravelly with occasional cobbles	

Field Data

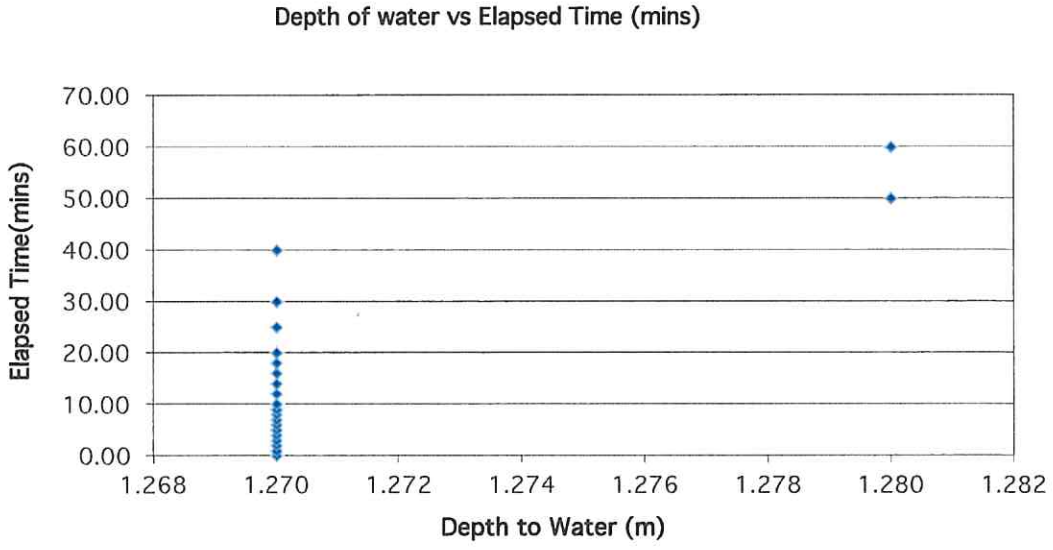
Depth to Water (m)	Elapsed Time (min)
1.270	0.00
1.270	1.00
1.270	2.00
1.270	3.00
1.270	4.00
1.270	5.00
1.270	6.00
1.270	7.00
1.270	8.00
1.270	9.00
1.270	10.00
1.270	12.00
1.270	14.00
1.270	16.00
1.270	18.00
1.270	20.00
1.270	25.00
1.270	30.00
1.270	40.00
1.280	50.00
1.280	60.00

Field Test

Depth of Pit (D)	1.75	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.27	m
Final depth to water =	1.280	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	1.995	m2
Total Exposed area =	2.895	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 5.2E-05 m/min or 8.63558E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Beech House, Scholarstown — Contract No. 21167
Test No. IT06 (2nd cycle) — 712368.625
Engineer DBFL Consulting Engineers — 726851.292
Date: 10.08.2018 — 86.117

Summary of ground conditions

from	to	Description	Ground water
0.00	0.20	Firm brown TOPSOIL with rootlets	No water
0.20	0.65	Stiff light brown sandy SILT with occasional gravel	
0.80	1.75	Stiff brown/light greyish brown sandy gravelly with occasional cobbles	

Field Data

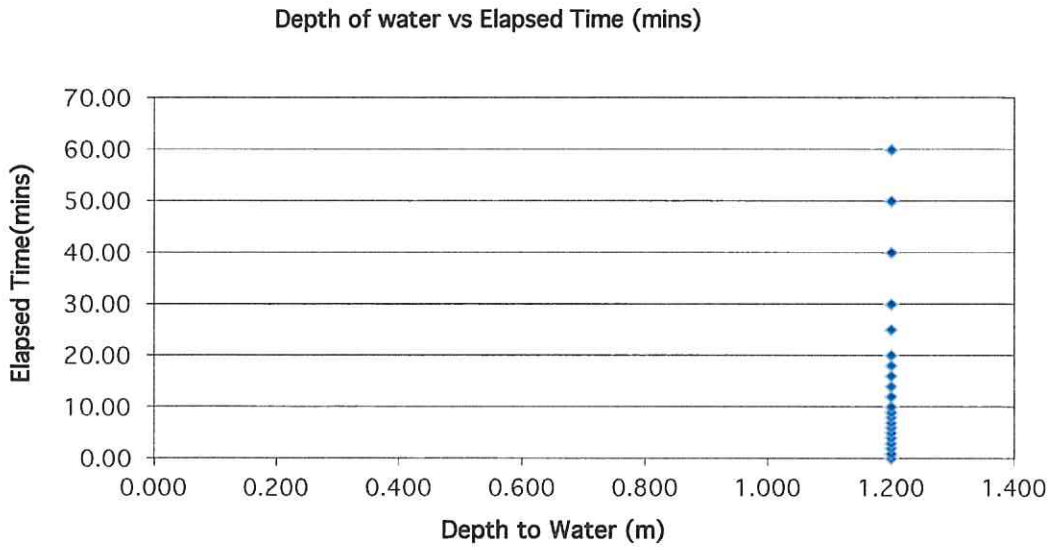
Depth to Water (m)	Elapsed Time (min)
1.200	0.00
1.200	1.00
1.200	2.00
1.200	3.00
1.200	4.00
1.200	5.00
1.200	6.00
1.200	7.00
1.200	8.00
1.200	9.00
1.200	10.00
1.200	12.00
1.200	14.00
1.200	16.00
1.200	18.00
1.200	20.00
1.200	25.00
1.200	30.00
1.200	40.00
1.200	50.00
1.200	60.00

Field Test

Depth of Pit (D)	1.75	m
Width of Pit (B)	0.60	m
Length of Pit (L)	1.50	m
Initial depth to Water =	1.20	m
Final depth to water =	1.200	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.9	m2
*Av. side area of permeable stratum over test period=	2.31	m2
Total Exposed area =	3.21	m2

Infiltration rate (f) = Volume of water used/unit exposed area / unit time

f= 0 m/min or 0 m/sec



Appendix VI Laboratory Data

IGSL Ltd
Materials Laboratory
Unit J5, M7 Business Park
Newhall, Naas
Co. Kildare
045 846176

Test Report

Determination of Moisture Content, Liquid & Plastic Limits

Tested in accordance with BS1377:Part 2:1990, clauses 3.2*, 4.3, 4.4 & 5.3

Report No. **R92781** Contract No. 21167 Contract Name: Scolarstown Road,Dublin

Customer DBFL Consulting Engineers,Ormond House, Upper Ormond Quay, Dublin 7, Ireland

Samples Received: 14/08/18 Date Tested: 17/08/18

BH/TP	Sample No.	Depth (m)	Lab. Ref	Sample Type	Moisture Content %	Liquid Limit %	Plastic Limit %	Plasticity Index	% <425µm	Preparation	Liquid Limit Clause	Classification (BS5930)	Description
TP02	AA98918	1.0	A18/7291	B	10	27	16	11	52	WS	4.4	C L	Brown sandy gravelly CLAY
TP03	AA94905	2.0	A18/7293	B	10	45	29	16	28	WS	4.4	M I	Brown silty, sandy, GRAVEL with some cobbles
TP08	AA81278	1.0	A18/7296	B	14	25	17	8	54	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY with some cobbles
TP10	AA81289	2.0	A18/7297	B	8.6	25	16	10	59	WS	4.4	C L	Brown sandy gravelly CLAY
TP12	AA98927	1.0	A18/7298	B	8.8	29	18	11	66	WS	4.4	C L	Light brown slightly sandy, gravelly, CLAY with some cobbles
TP13	AA81281	2.0	A18/7300	B	12	33	17	16	52	WS	4.4	C L	Brown slightly sandy, slightly gravelly, CLAY
TP14	AA98924	1.5	A18/7301	B	13	25	NP	NP	77	WS	4.4		Dark brown sandy gravelly SILT
TP15	AA81284	1.0	A18/7302	B	12	27	15	12	65	WS	4.4	C L	Brown sandy gravelly CLAY

Notes: Preparation: WS - Wet sieved; AR - As received; NP - Non plastic

Liquid Limit Clause: 4.3 Cone Penetrometer definitive method; 4.4 Cone Penetrometer one point method

Sample Type: B - Bulk Disturbed; U - Undisturbed

Remarks:

NOTE: *Clause 3.2 of BS1377 is a "withdrawn" standard due to publication of ISO17892-1:2014

Opinions and interpretations are outside the scope of accreditation.

The results relate to the specimens tested. Any remaining material will be retained for one month.

IGSL Ltd Materials Laboratory

Persons authorized to approve reports

H Byrne (Laboratory Manager)

Approved by | Date: 3/9/18 | Page: 1 of 1

TEST REPORT

Determination of Particle Size Distribution

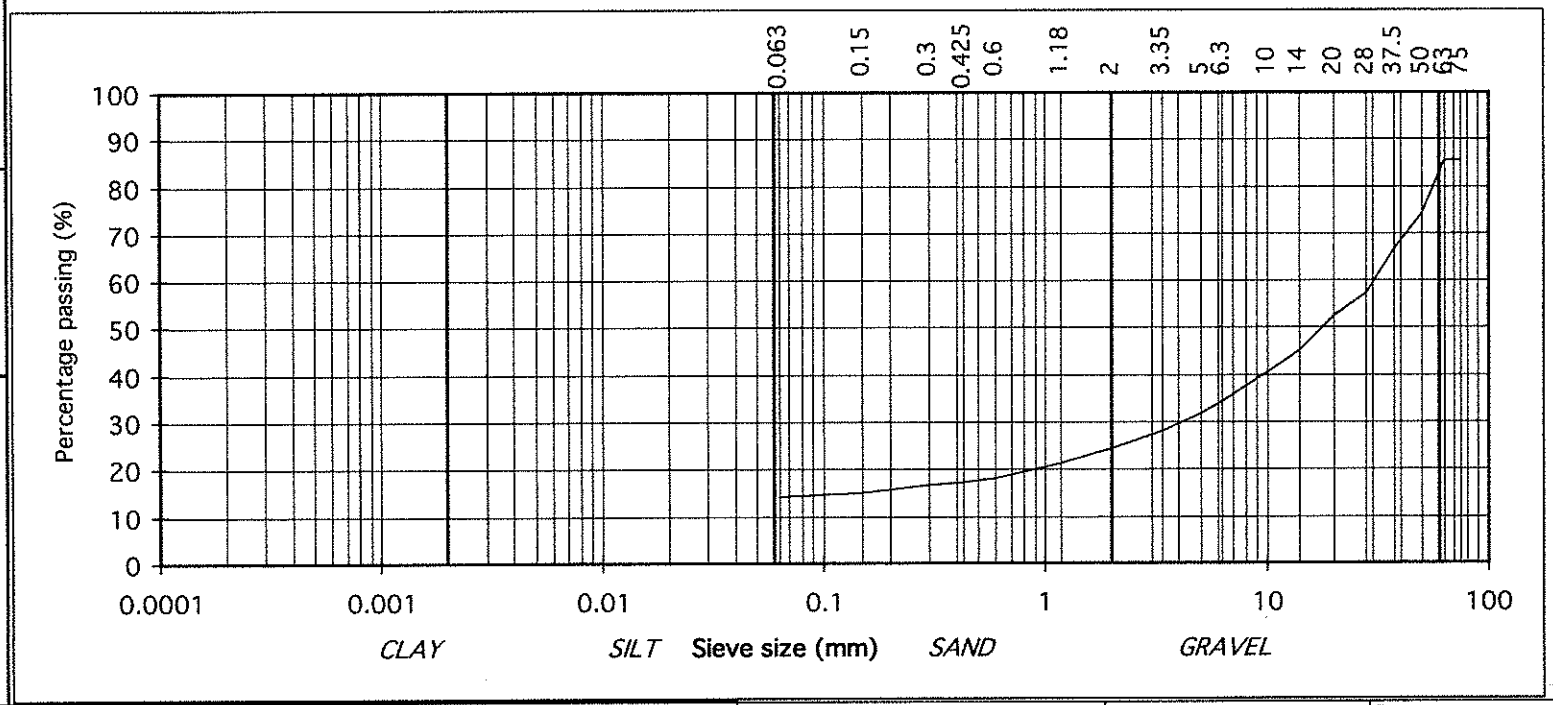
Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5
(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1337

particle size	% passing	
75	86	COBBLES
63	86	
50	74	GRAVEL
37.5	67	
28	57	
20	53	
14	45	
10	40	
6.3	34	
5	32	
3.35	28	
2	24	
1.18	21	SAND
0.6	18	
0.425	17	
0.3	17	
0.15	15	
0.063	14	SILT/CLAY

Contract No: 21167 Report No. R92782
Contract: Scholarstown Road , Dublin
BH/TP : TP03
Sample No. AA94905 Lab. Sample No. A18/7293
Sample Type: B
Depth (m) 2.00 Customer: DBFL Consulting Engineers,Ormond House, Upper Ormond Quay, Dublin 7, Ireland
Date Received 14/08/2018 Date Testing started 17/08/2018
Description: Brown silty, sandy, GRAVEL with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016 Sample size did not meet the requirements of BS1377



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
	24/08/18	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5

(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 1337

particle size	% passing	
75	91	COBBLES
63	91	
50	87	GRAVEL
37.5	83	
28	81	
20	80	
14	77	
10	74	
6.3	70	
5	67	
3.35	64	
2	60	
1.18	56	SAND
0.6	51	
0.425	48	
0.3	45	
0.15	41	
0.063	34	SILT/CLAY
0.037	29	
0.026	27	
0.017	23	
0.010	20	
0.007	18	
0.005	15	
0.002	11	

Contract No: 21167 Report No. R92783

Contract: Scholarstown Road , Dublin

BH/TP : TP08

Sample No. AA81278 Lab. Sample No. A18/7296

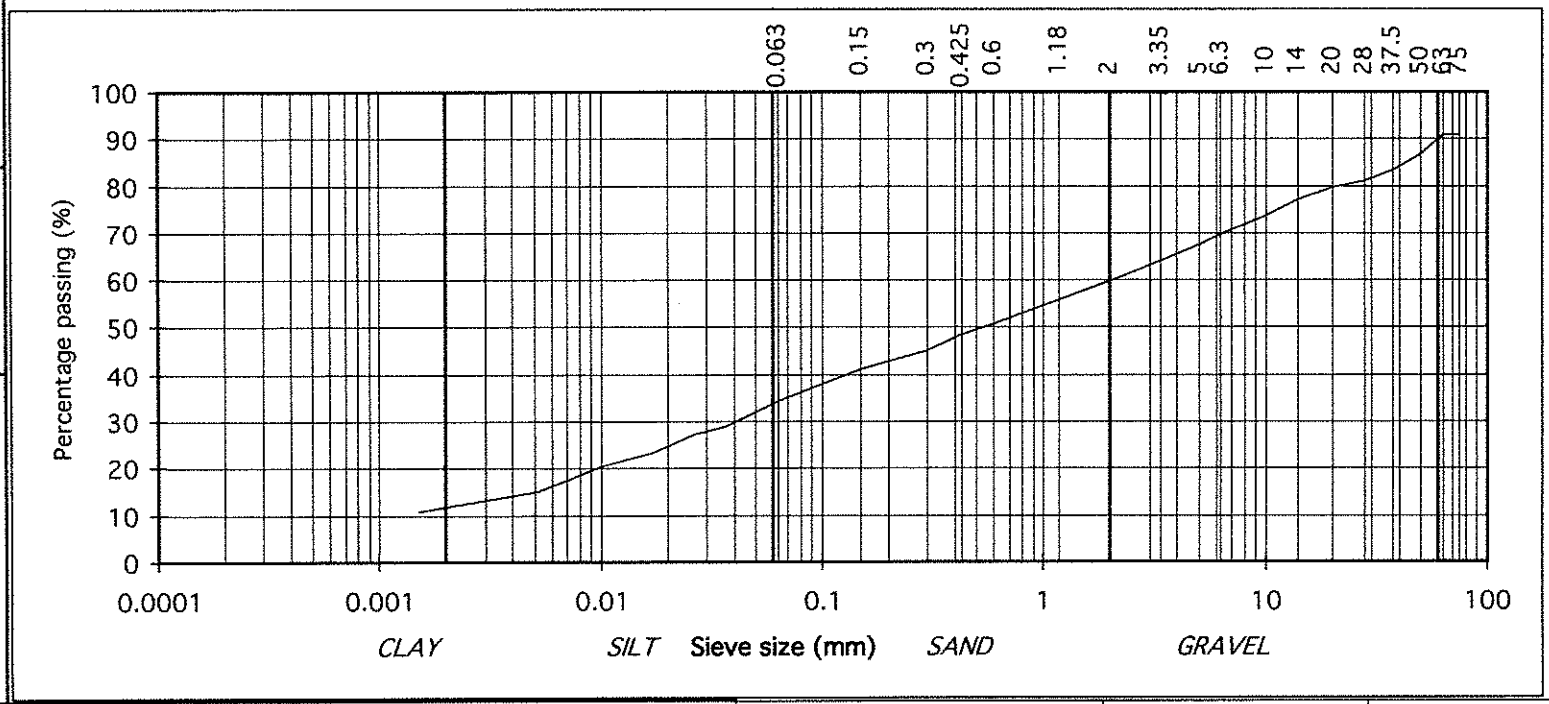
Sample Type: B

Depth (m) 1.00 Customer: DBFL Consulting Engineers,Ormond House, Upper Ormond Quay, Dublin 7, Ireland

Date Received 14/08/2018 Date Testing started 18/08/2018

Description: Brown slightly sandy, slightly gravelly, CLAY with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
	24/08/18	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5

(note: Sedimentation stage not accredited)

particle size	% passing	
75	100	COBBLES
63	92	
50	87	GRAVEL
37.5	83	
28	78	
20	76	
14	74	
10	71	
6.3	67	
5	65	
3.35	62	
2	59	
1.18	55	SAND
0.6	51	
0.425	48	
0.3	45	
0.15	39	
0.063	34	SILT/CLAY
0.038	27	
0.027	25	
0.017	22	
0.010	20	
0.007	18	
0.005	15	
0.002	10	

Contract No: 21167 Report No. R92784

Contract: Scholarstown Road , Dublin

BH/TP : TP12

Sample No. AA98927 Lab. Sample No. A18/7298

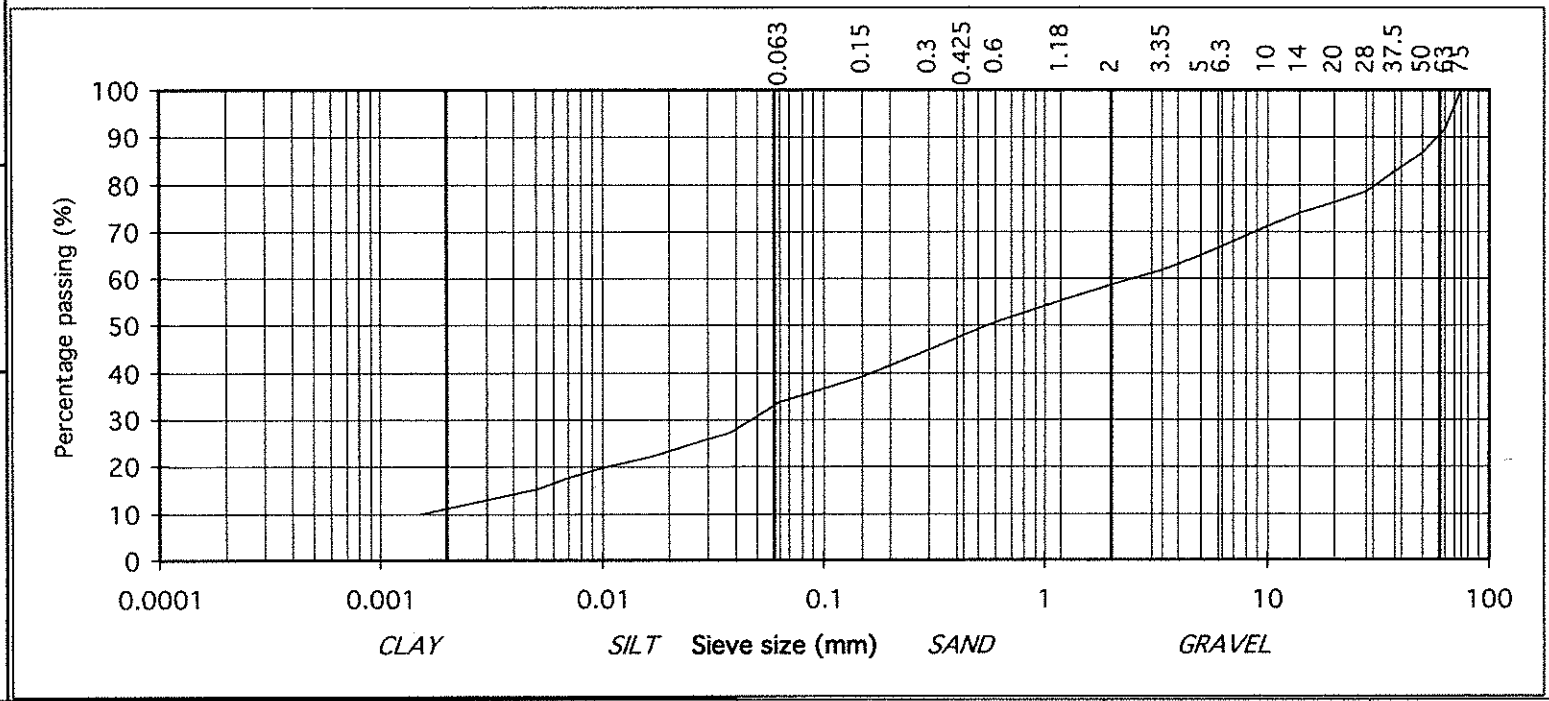
Sample Type: B

Depth (m) 1.00 Customer: DBFL Consulting Engineers,Ormond House, Upper Ormond Quay, Dublin 7, Ireland

Date Received 14/08/2018 Date Testing started 17/08/2018

Description: Light brown slightly sandy, gravelly, CLAY with some cobbles

Remarks Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
	30/08/18	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

TEST REPORT

Determination of Particle Size Distribution

Tested in accordance with: BS1377:Part2:1990 , clause 9.2 & 9.5

(note: Sedimentation stage not accredited)

ISO 17025 IVNAB ACCREDITED TESTING DETAILED IN SCOPE REG NO. 13-37

particle size	% passing	
75	100	COBBLES
63	100	
50	100	GRAVEL
37.5	100	
28	95	
20	92	
14	88	
10	84	
6.3	79	
5	77	
3.35	74	
2	70	
1.18	67	SAND
0.6	63	
0.425	60	
0.3	55	
0.15	48	
0.063	44	SILT/CLAY
0.037	35	
0.027	32	
0.017	27	
0.010	21	
0.007	18	
0.005	15	
0.002	11	

Contract No: 21167 Report No. R92785

Contract: Scholarstown Road , Dublin

BH/TP : TP13

Sample No. AA81281 Lab. Sample No. A18/7300

Sample Type: B

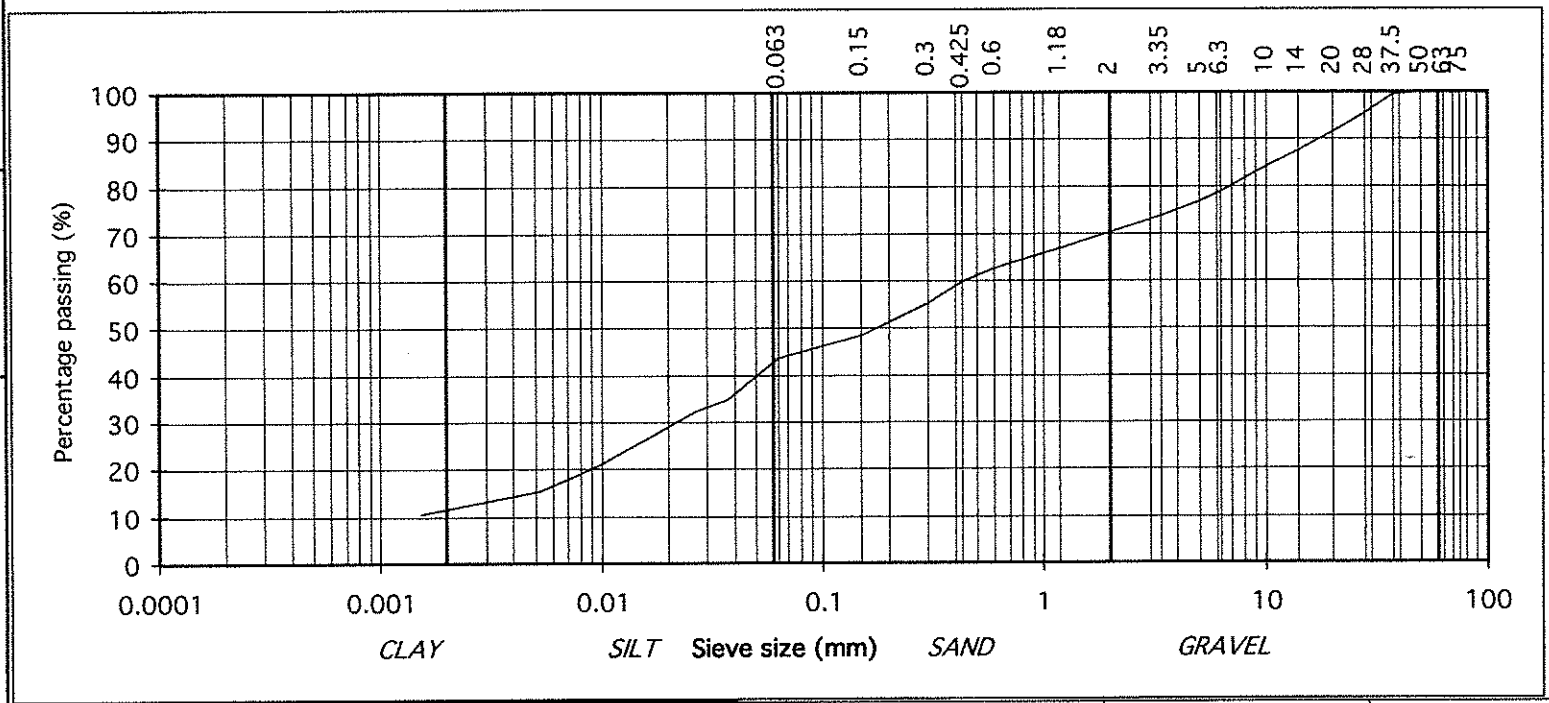
Depth (m) 2.00 Customer: DBFL Consulting Engineers,Ormond House, Upper Ormond Quay, Dublin 7, Ireland

Date Received 14/08/2018 Date Testing started 17/08/2018

Description: Brown slightly sandy, slightly gravelly, CLAY

Remarks

Note: Clause 9.2 and Clause 9.5 of BS1377:Part 2:1990 have been superseded by ISO17892-4:2016



IGSL Ltd Materials Laboratory

Approved by:	Date:	Page no:
H Byrne	24/08/18	1 of 1

Persons authorised to approve report: J Barrett (Quality Manager) H Byrne (Laboratory Manager)

Chemtest
The right chemistry to deliver results
Chemtest Ltd.
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	18-25113-1
Initial Date of Issue:	28-Aug-2018
Client	IGSL
Client Address:	M7 Business Park Naas County Kildare Ireland
Contact(s):	Darren Keogh
Project	21167 Scholarstown Dublin
Quotation No.:	Q17-08989
Order No.:	
No. of Samples:	8
Turnaround (Wkdays):	5
Date Approved:	28-Aug-2018
Approved By:	
Details:	Glynn Harvey, Laboratory Manager

Date Received:	21-Aug-2018
Date Instructed:	21-Aug-2018
Results Due:	28-Aug-2018

Chemtest
The right chemistry to deliver results

Results - Leachate

Project: 21167 Scholarstown Dublin

Client: IGSL			**Chemtest Job No.:**		18-25113	18-25113	18-25113	18-25113	18-25113
Quotation No.: Q17-08989			**Chemtest Sample ID.:**		674827	674829	674830	674832	674833
Order No.:			Client Sample Ref.:		TP1	TP3	TP5	TP10	TP13
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.00	1.00	1.00	0.50	1.00
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Ammonium	U	1220	mg/l	0.050	0.19	0.20	0.16	0.20	0.20
Ammonium	N	1220	mg/kg	0.10	1.9	2.0	1.6	2.0	2.0
Boron (Dissolved)	U	1450	µg/l	20	< 20	< 20	< 20	< 20	< 20
Boron (Dissolved)	U	1450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20

Chemtest
The right chemistry to deliver results

Results - Soil

Project: 21167 Scholarstown Dublin

Client: IGSL					Chemtest Job No.:	18-25113	18-25113	18-25113	18-25113	18-25113	18-25113	18-25113
Quotation No.: Q17-08989					Chemtest Sample ID.:	674827	674828	674829	674830	674831	674832	674833	674834
Order No.:					Client Sample Ref.:	TP1	TP2	TP3	TP5	TP8	TP10	TP13	TP15
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00
					Asbestos Lab:	COVENTRY		COVENTRY	COVENTRY		COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
ACM Type	U	2192		N/A		-		-	-		-	-	
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected		No Asbestos Detected	No Asbestos Detected		No Asbestos Detected	No Asbestos Detected	
Moisture	N	2030	%	0.020		11	11	11	11	9.3	10	10	12
pH	U	2010		N/A			[A] 8.4			[A] 8.6			[A] 8.4
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40		< 0.40		< 0.40	< 0.40		< 0.40	< 0.40	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010			< 0.010			< 0.010			< 0.010
Sulphur (Elemental)	U	2180	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Cyanide (Total)	U	2300	mg/kg	0.50		[A] < 0.50		[A] < 0.50	[A] < 0.50		[A] < 0.50	[A] < 0.50	
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50		[A] 0.82		[A] 4.6	[A] 3.3		[A] 3.1	[A] 2.6	
Sulphate (Acid Soluble)	U	2430	%	0.010		[A] 0.019		[A] 0.030	[A] < 0.010		[A] 0.019	[A] 0.020	
Arsenic	U	2450	mg/kg	1.0		44		28	25		27	21	
Barium	U	2450	mg/kg	10		80		56	46		41	40	
Cadmium	U	2450	mg/kg	0.10		2.2		1.5	1.4		1.6	1.5	
Chromium	U	2450	mg/kg	1.0		45		19	30		27	25	
Molybdenum	U	2450	mg/kg	2.0		3.3		2.7	< 2.0		< 2.0	< 2.0	
Antimony	N	2450	mg/kg	2.0		< 2.0		< 2.0	< 2.0		< 2.0	< 2.0	
Copper	U	2450	mg/kg	0.50		42		22	25		24	23	
Mercury	U	2450	mg/kg	0.10		0.12		< 0.10	< 0.10		< 0.10	< 0.10	
Nickel	U	2450	mg/kg	0.50		72		49	50		47	45	
Lead	U	2450	mg/kg	0.50		33		21	24		33	24	
Selenium	U	2450	mg/kg	0.20		1.2		0.52	0.81		< 0.20	0.27	
Zinc	U	2450	mg/kg	0.50		150		86	89		90	75	
Chromium (Trivalent)	N	2490	mg/kg	1.0		45		19	30		27	25	
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50		< 0.50	< 0.50		< 0.50	< 0.50	
Total Organic Carbon	U	2625	%	0.20		[A] 0.24		[A] 0.77	[A] 0.45		[A] 0.67	[A] 0.41	
Mineral Oil	N	2670	mg/kg	10		< 10		< 10	< 10		< 10	< 10	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] 2.4	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0		[A] < 5.0		[A] < 5.0	[A] < 5.0		[A] < 5.0	[A] < 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0		[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	

Chemtest
The right chemistry to deliver results

Results - Soil

Project: 21167 Scholarstown Dublin

Client: IGSL		**Chemtest Job No.:**			18-25113	18-25113	18-25113	18-25113	18-25113	18-25113	18-25113	18-25113
Quotation No.: Q17-08989		**Chemtest Sample ID.:**			674827	674828	674829	674830	674831	674832	674833	674834
Order No.:		Client Sample Ref.:			TP1	TP2	TP3	TP5	TP8	TP10	TP13	TP15
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00
		Asbestos Lab:			COVENTRY		COVENTRY	COVENTRY		COVENTRY	COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] 1.8	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] 13	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	[A] < 5.0		[A] < 5.0	[A] < 5.0		[A] < 5.0	[A] 15	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10		[A] < 10	[A] < 10		[A] < 10	[A] 17	
Benzene	U	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Toluene	U	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Ethylbenzene	U	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
m & p-Xylene	U	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
o-Xylene	U	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0		[A] < 1.0	[A] < 1.0	
Naphthalene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Acenaphthene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Fluorene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Phenanthrene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Anthracene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Fluoranthene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Pyrene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Benzo[a]anthracene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Chrysene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Benzo[a]pyrene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Coronene	N	2800	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0		< 2.0	< 2.0		< 2.0	< 2.0	
PCB 28	U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 52	U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 90+101	U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 118	U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 153	U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 138	U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
PCB 180	U	2815	mg/kg	0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010		[A] < 0.010	[A] < 0.010	
Total PCBs (7 Congeners)	N	2815	mg/kg	0.10	[A] < 0.10		[A] < 0.10	[A] < 0.10		[A] < 0.10	[A] < 0.10	
Total Phenols	U	2920	mg/kg	0.30	< 0.30		< 0.30	< 0.30		< 0.30	< 0.30	

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Results - Single Stage WAC

Project: 21167 Scholarstown Dublin

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-25113						
Chemtest Sample ID:	674827						
Sample Ref:	TP1						
Sample ID:							
Top Depth(m):	1.00						
Bottom Depth(m):							
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	U	%	[A] 0.24	3	5	6
Loss On Ignition	2610	U	%	4.6	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	U		7.7	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.021	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	0.0010	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.11	1.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	23	230	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.8	68	500	800	1000

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

Waste Acceptance Criteria

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

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Results - Single Stage WAC

Project: 21167 Scholarstown Dublin

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-25113						
Chemtest Sample ID:	674829						
Sample Ref:	TP3						
Sample ID:							
Top Depth(m):	1.00						
Bottom Depth(m):							
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	U	%	[A] 0.77	3	5	6
Loss On Ignition	2610	U	%	1.9	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	U		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.034	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	< 0.0010	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.13	1.3	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	26	260	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	< 2.5	< 50	500	800	1000

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

Waste Acceptance Criteria

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Results - Single Stage WAC

Project: 21167 Scholarstown Dublin

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-25113						
Chemtest Sample ID:	674830						
Sample Ref:	TP5						
Sample ID:							
Top Depth(m):	1.00						
Bottom Depth(m):							
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	U	%	[A] 0.45	3	5	6
Loss On Ignition	2610	U	%	1.4	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	U		8.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.074	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	< 0.0010	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.14	1.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	34	340	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.9	< 50	500	800	1000

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

Waste Acceptance Criteria

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Results - Single Stage WAC

Project: 21167 Scholarstown Dublin

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-25113						
Chemtest Sample ID:	674832						
Sample Ref:	TP10				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:							
Top Depth(m):	0.50						
Bottom Depth(m):							
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	U	%	[A] 0.67	3	5	6
Loss On Ignition	2610	U	%	2.0	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	U		8.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.037	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	0.0012	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.17	1.7	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	32	320	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	8.7	87	500	800	1000

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

Waste Acceptance Criteria

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Results - Single Stage WAC

Project: 21167 Scholarstown Dublin

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	18-25113						
Chemtest Sample ID:	674833						
Sample Ref:	TP13				**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Sample ID:							
Top Depth(m):	1.00						
Bottom Depth(m):							
Sampling Date:							
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	U	%	[A] 0.41	3	5	6
Loss On Ignition	2610	U	%	1.8	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 Congeners)	2815	U	mg/kg	< 0.10	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] 17	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	U		8.4	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.041	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	< 0.0010	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	< 0.0010	< 0.050	0.5	10	70
Copper	1450	U	< 0.0010	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	< 0.0010	< 0.050	0.5	10	30
Nickel	1450	U	< 0.0010	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	< 0.0010	< 0.010	0.06	0.7	5
Selenium	1450	U	< 0.0010	< 0.010	0.1	0.5	7
Zinc	1450	U	< 0.0010	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.14	1.4	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	32	320	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	6.8	68	500	800	1000

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

Waste Acceptance Criteria

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Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample ID:	Sample Ref:	Sample ID:	Sampled Date:	Deviation Code(s):	Containers Received:
674827	TP1			A	Amber Glass 250ml
674828	TP2			A	Amber Glass 250ml
674829	TP3			A	Amber Glass 250ml
674829	TP3			A	Amber Glass 60ml
674830	TP5			A	Amber Glass 250ml
674830	TP5			A	Amber Glass 60ml
674831	TP8			A	Amber Glass 250ml
674832	TP10			A	Amber Glass 250ml
674832	TP10			A	Amber Glass 60ml
674833	TP13			A	Amber Glass 250ml
674833	TP13			A	Amber Glass 60ml
674834	TP15			A	Amber Glass 250ml

Test Methods

SOP	Title	Parameters included	Method summary
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1450	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

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Test Methods

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

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Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis
The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols
For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.co.uk

Appendix VII Site Plan

SITE BOUNDEARY IN RED

SITE LAYOUT

DBFL REF:170232

NOTES

GENERAL NOTES

SITE INVESTIGATION LEGEND

CBR	CBR, PLATE BEARING TEST (15 No.)
DP	DYNAMIC PROBE LOCATION TARGET DEPTH 4.0m TO 5.0m BELOW GROUND LEVEL (30 No.)
TP	TRIAL PIT (15 No.) TARGET DEPTH 3.0m BELOW GROUND LEVEL
IT	INFILTRATION TRENCH (5 No.)
BH1	BOREHOLE TARGET DEPTH 8m-9m BELOW GROUND LEVEL (3 No.)

ORDNANCE SURVEY IRELAND LICENCE
No EN 0017918
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GOVERNMENT OF IRELAND

REV | DATE | DESCRIPTION | BY | CHKD

PLANNING

DFPL Consulting Engineers

PROJECT
RESIDENTAL DEVELOPMENT
SCHOLARSTOWN

DWG TITLE
SITE INVESTIGATION PLAN

ARCHITECT
JOHN FLEMING ARCHITECT

DWG No 170232-1000