IGSL Limited

IGSL Report No 23046

Sallins Amenity Lands
Sallins, Co Kildare

On Behalf of

Kildare County Council
(Client)
&
Donnachadh O'Brien & Assoc
Consulting Engineers

Report Date
19th February 2021

Geotechnical Report

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DEVELOPMENT. OF
AMENITY LANDS
AT SALLINS

KILDARE CO. COUNCIL

DONNACHADH O'BRIEN
CONSULTING ENGINEERS

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.

Standards

The ground investigation works for this project have been carried out by IGSL in accordance with Eurocode 7 - Part 2: Ground Investigation & Testing (EN 1997-2:2007). This has been used together with complementary documents such as BS 5930 (2015), BS 1377 (Parts 1 to 9) and Engineers Ireland Specification & Related Documents for Ground Investigation in Ireland (2006). The following Irish (IS) and European Standards or Norms are referenced:

- IS EN 1997-2 Eurocode 7: 2007 – Geotechnical Design – Part 2: Ground Investigation & Testing
- IS EN ISO 22475-1:2006 Geotechnical Investigation and Sampling – Sampling Methods & Groundwater Measurements
- IS EN ISO 14688-1:2002 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 1: Identification and Description
- IS EN ISO 14688-2:2004 Geotechnical Investigation and Testing – Identification and Classification of Soil, Part 2: Classification Principles

Routine Sampling.

Undisturbed samples of soils, predominantly cohesive in nature are obtained unless otherwise stated by a 104mm diameter open-drive tube sampler or Piston 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 were conducted strictly in accordance with Section 4.6 of IS EN 1997-2:2007. The SPT equipment (hammer energy test) has been calibrated in accordance with EN ISO 22476-3:2005 to obtain the Energy Ratio (E) of each hammer. A calibration certificate is available upon request. The E_r is defined as the ratio of the actual energy E_{mes} (measured energy during calibration) delivered to the drive weight assembly into the drive rod below the anvil, to the theoretical energy (E_{mes}) as calculated from the drive weight assembly. The recorded number of blows (N) reported on the engineering logs are uncorrected. In sands, the energy losses due to rod length and the effect of the overburden pressure should be taken into account (see IS EN ISO 22476-3:2005).

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 conditions, tidal variations etc.

Engineering Logging

Soil and rock identification has been based on the examination of the samples recovered and conforms with IS EN ISO 14688-1:2002 and IS EN ISO 14689-1:2004.

Where peat has been encountered during site works, 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).

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.

Reporting

Recommendations made and opinions expressed in this 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 by IGSL Ltd for ground conditions between exploratory hole locations.

The engineering logs provide ground profiles and configuration of strata relevant to the investigation depths achieved and caution should be taken when extrapolating between exploratory points. No liability is accepted for ground conditions extraneous to the investigation points. Unless specifically stated, no account has been taken of possible subsidence due to mineral extraction, mining works or karstification below or close to the site.

This report has been prepared for the project client and the information should not be used without prior written permission. Any recommendations developed in this report specifically relate to the proposed development. IGSL Ltd accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

REPORT ON A SITE INVESTIGATION
FOR A PROPOSED DEVELOPMENT
AT AMENITY LANDS
SALLINS COUNTY KILDARE
ON BEHALF OF
KILDARE COUNTY COUNCIL (CLIENT)
&
DONNACHADH O'BRIEN AND ASSOCIATES
CONSULTING ENGINEERS

Report No. 23046 **FEBRUARY 2021**

I Introduction

A major new amenity development is proposed for Kildare County Council on lands located in Sallins, County Kildare.

An investigation of sub soil conditions in the area of the new development has been carried out by IGSL for DOBA Consulting Engineers, on behalf of Kildare County Council. The works were carried out during a lockdown period following approval from the local authority. All field operations were completed in accordance with HSE safety guidelines related to COVID 19.

The scheduled site investigation included the following elements:

- Trial Pits 15 nr.
- Infiltration Tests (BRE Digest 365) 7 nr.
- In Situ CBR by Plate Test 4 nr.
- Environmental Laboratory Testing

This report includes all factual data from field operations and laboratory and discusses the findings relative to foundation and infrastructural design for the new development.

II Fieldwork

The development is to take place on a greenfield / brownfield site bounded to the south and east by the Grand Canal (Liffey Aqueduct). The site and the exploratory locations are noted on the drawing enclosed in Appendix V. The drawing was provided by DOBA.

The various elements of the investigation are detailed in the following paragraphs. All field works were supervised by experienced geotechnical engineers who carefully recorded stratification, recovered samples as required and prepared detailed records.

Each location was scanned electronically (CAT) to ensure that existing services were not damaged. The locations were also referenced to National Grid Co-ordinates and OD levels were established.

Trial Pits

Fifteen trial pits were opened using a light tracked excavator under engineering supervision. Trial Pits were referenced TP01 to TP15, the findings were logged and detailed geotechnical records are enclosed in Appendix I with supporting photographs.

The records reflect some variation in stratification over the site area.

MADE GROUND was found in nine locations. The fill varies in thickness from about 0.50 to in excess of 2.00 metres and generally comprises gravelly CLAY with varying amounts of building rubble. In six of the above trial pits a stratum of grey brown sandy gravelly CLAY (TILL) underlies the fill and excavations continued to completion in the gravelly CLAY at about 2.50 metres BGL. In three trial pits TP02, TP07 and TP 11, the FILL overlies a stratum of sandy GRAVEL which was penetrated to final depths of 2.50 metres.

Naturally occurring soils were encountered in the remaining six locations. In four of these, topsoil overlies brown to grey brown sandy gravelly SILT/CLAY. In the remaining two locations (TP14 and TP15) topsoil overlies sandy GRAVEL

Ground water was noted in the majority of trial pits, fully detailed on the individual records. Water ingress was recorded as seepage or light flow and in the areas where gravel was encountered was associated with trench collapse.

All trial pits were terminated in either cohesive or granular soils. Bedrock was not encountered during this limited depth investigation.

Infiltration Tests (BRE Digest 365)

Tests were scheduled at seven locations to establish soil permeability. Tests were carried out in accordance with BRE Digest 365. Trial Pts were opened to approximately 1.50 metres deep and the stratification was recorded. The open excavations are filled with water and the dissipation of this water over time is recorded.

Testing is normally carried out over two cycles following the initial soakage. If there is no fall in water level during the initial cycle the test is deemed a failure and a second cycle is not requited.

Details of each test are presented in Appendix II and the results are summarised as follows:

Test No.	**Infiltration Rate (f). Metres/ Minute**		
	1st Cycle	**2nd Cycle**	**3rd Cycle**
SA01		0.00093	
SA02	0.00509	0.00454	
SA03	0.00000		
SA04	0.0000475		
SA05	0.0000285		
SA06	0.0000590		
SA07	0.00285	0.00283	0.00267

Results from SA02 and SA07, carried out in gravel, indicate suitability for dispersion of surface water. The remaining tests were carried out in impermeable cohesive soils with little or no permeability recorded.

In Situ CBR by Plate Bearing Test

The in-situ CBR value of the soils at shallow depth was determined using plate bearing test apparatus.

A steel plate is loaded incrementally and its' deflection under load is recorded. The load is then removed and soil recovery is measured. Testing is carried out over two cycles. The equivalent CBR value is calculated in accordance with NRA HD25-26/10.

Detailed results are presented in Appendix III and summarised as follows:

Test No.	Depth	Stratum.	CBR% Load Cycle.	CBR% Re-load Cycle
CBR 01	G.L.	Fill	0.2	0.4
CBR02	0.50	Clay	0.4	1.1
CBR 03	G.L	Fill	2.1	7.9
CBR04	0.30	Clay	0.9	1.6

III. Laboratory Testing

All samples recovered during the course of the investigation were returned to IGSL for initial assessment. Detailed laboratory analysis to confirm soil classification and behavioural characteristics was not required.

A number of samples were however selected for environmental analysis to RILTA (WAC) parameters. This environmental testing was carried out in the UK by EUROFINS and detailed test results are presented in Appendix IV to this report.

RILTA Environmental

Five soil samples were submitted for detailed environmental analysis to RILTA (WAC) parameters.

The results all fall below the INERT classification parameters indicating suitability for disposal of excavated material either on-site or to a suitable INERT Landfill facility. No ASBESTOS traces were recorded.

IV. Discussion:

The lands outlined in the site location plan and examined during this geotechnical investigation are to be developed for amenity purposes by Kildare County Council.

Note is taken of the Grand Canal forming much of the site boundary to the south and east.

The investigation carried out comprised four elements:

1. Trial Pit Investigation to identify soil composition.
2. Infiltration Tests to establish suitability for dispersion of surface water.
3. In Situ CBR Tests to provide data for pavement design.
4. Environmental Tests to establish possible contamination.

Summary Stratification

The subsoils identified over much of the site consist of brown and grey silty sandy gravelly CLAY, with significant bands of sandy GRAVEL noted in about 40% of the trial pit locations. FILL or MADE GROUND has been identified in more than 50% of the locations, the thickness of the FILL varies from about 0.50 to 2.00 metres.

Ground water has been noted in most locations with excavation instability observed generally in the more granular soils. Investigation depth was generally 2.50 metres BGL. Bedrock was not encountered.

The trial pitting operation, while identifying the stratification, does not define soil strength. Visual assessment by the field engineers would indicate that the cohesive soils in the depth range GL to 2.50 metres would be classed as FIRM while the granular soils present as loose to medium dense.

Infiltration Tests

Seven tests were carried out and very low permeability characteristics were exhibited in those tests carried out in the gravelly silty CLAY stratum. This is typical of the glacial till or boulder clay deposition of the general area.

Tests carried out in the GRAVEL soils indicate that this material will be suitable for dispersion of storm or surface water in conventional soakaways.

CBR

In situ CBR values were established by plate bearing test at four location. Two tests were carried out at surface on FILL material. Results of 0.2% and 2.1% were obtained at load cycle, increasing to 0.4 and 7.9% at reload.
Two tests were taken on gravelly clay below the top soil, results here ranged from 0.4 to 1.6%, increasing marginally on re-load.

The low CBR values obtained may well reflect the very wet nature of the site following adverse winter weather. CBR values will increase as moisture content decreases, this may be assisted by site drainage and drier ground conditions.

Environmental Tests

Five samples were tested in accordance with RILTA SUITE parameters. No evidence of elevated contamination was found and no traces of Asbestos were identified. No issues arise with safety of personnel and excavated material can be utilised on site for non-engineering purposes.

IGSL/JC
February 2021

Appendix I Trial Pit Records

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP01**
		SHEET	Sheet 1 of 1
LOGGED BY	P.Cummins	**CO-ORDINATES**	
		DATE STARTED	08/01/2021
		DATE COMPLETED	08/01/2021
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 tonne Mini Digger

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 MADE GROUND (comprised of brown gravelly sandy silty clay, with concrete, plastic, roots, branches and red brick)					AA148204	B	0.50-1.50		
1.0									
2.0 Brown/grey slightly gravelly silty CLAY		2.00		1 (Seepage)	AA143205	B	2.00-2.50		
End of Trial Pit at 2.50m		2.50							
3.0									
4.0									

Groundwater Conditions
Moderate collapse from 0 -2.0

Stability
Seepage at 2.0m all directions

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP02**
		SHEET	Sheet 1 of 1
LOGGED BY	P.Cummins	**CO-ORDINATES**	
		DATE STARTED	08/01/2021
		DATE COMPLETED	08/01/2021
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 tonne Mini Digger

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 MADE GROUND (comprised of moist - dry, brown gravelly sandy silty clay - class 2 fill)		0.20							
Orange very gravelly sandy silty CLAY, Gravel is predominately metamorphic rock type of limestone and slate (possibly made ground)		0.50							
Dark grey to grey silty SAND with fine gravel, infrequent rootlets, rare large gravel clasts and lenticular sand lensing					AA148205	B	0.50		
1.0 Grey, sandy GRAVEL, medium cobble content and low boulder content, (sand and gravel lensing)		1.05			AA148206	B	1.00		
					AA143206	B	1.50		
2.0					AA143207	B	2.00-2.50		
				1 (Seepage)					
End of Trial Pit at 2.50m		2.40							
3.0									
4.0									

Groundwater Conditions
Slight seepage at base

Stability
Moderate collapse in GRAVEL Unit

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,
TRIAL PIT NO.	**TP03**
SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj
CO-ORDINATES	
DATE STARTED	21/12/2020
DATE COMPLETED	21/12/2020
CLIENT	Kildare County Council
GROUND LEVEL (m)	
EXCAVATION METHOD	3 T exavator
ENGINEER	DOBA

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.10							
MADE GROUND (comprised of firm brown slightly gravelly sandy Clay with mediu cobble and boulder content. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of various lithologies. Contains fagments of bricks, pottery, glass and black top)					AA147531	Env	0.20		
					AA147532	B	0.50		
Brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to medium subanular to subrounded predominanly of limestone.		0.70							
1.0					AA142532	B	1.00		
Grey brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded predominantly of limestone. Cobbles are subrounded of limestone.		1.10		1 (Seepage)					
					AA142533	B	1.50		
2.0 End of Trial Pit at 2.00m		2.00							
3.0									
4.0									

Groundwater Conditions
Water strike at 1.4

Stability
TP unstable below 1.4 . Collapse at 2.00m

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP04**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	18/12/2020
		DATE COMPLETED	18/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.25							
Brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded is fine to medium of various lithologies. Possible made ground					AA147529	B	0.50		
1.0 Dark grey to brown slightly sandy very clayey fine to coarse angular to subrounded GRAVEL predominantly of limestone. Sand is fine to coarse.		1.00			AA142529	B	1.00		
Light brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subraunded predominantly of limestone. Low cobble content		1.30							
Light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse subrounded to rounded predominantly of limestone. Cobbles are rounded of limestone.		1.60			AA147530	B	1.50		
2.0					AA142530	B	2.00		
Grey brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded predominantly of limestone. Cobbles are subrounded of limestone.		2.30							
End of Trial Pit at 2.60m		2.60			AA142531	B	2.50		
3.0									
4.0									

Groundwater Conditions
TP dry

Stability
TP stable

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP05**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	21/12/2020
		DATE COMPLETED	21/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.25							
MADE GROUND (comprised of brown slightly gravell sandy Clay. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of varius lithologies.)		0.70			AA142542	Env	0.30-0.40		
					AA147542	B	0.50		
Light grey brown slightly sandy slightly gravelly silty CLAY with widely spaced medium layers of silt. Sand is fine to coarse. Gravel is fine to coarse subrounded predominantly of limestone. 1.0					AA142543	B	1.00		
2.0 End of Trial Pit at 2.00m		2.00			AA147543	B	2.00		
3.0									
4.0									

Groundwater Conditions
TP dry

Stability
TP unstable

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP06**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	22/12/2020
		DATE COMPLETED	22/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL									
Light brown slightly sandy slightly gravelly silty CLAY with widely spaced medium layers of silt. Sand is fine to coarse. Gravel is fine to coarse subrounded predominantly of limestone.		0.25			AA147549	Env	0.20		
Grey brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subangular to subraunded predominantly of limestone. Low cobble and small boulder content.		0.60			AA142549	B	0.50		
1.0					AA147550	B	1.00		
2.0					AA142550	B	2.00-2.50		
Grey brown slightly clayey sandy fine to coarse aubangular to subrounded GRAVEL predominantly of limestone. Sand is fine to coarse.		2.20							
End of Trial Pit at 2.50m		2.50							
3.0									
4.0									

Groundwater Conditions
TP dry

Stability
TP stable

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP07**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	21/12/2020
		DATE COMPLETED	21/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL					AA147533	Env	0.10-0.25		
MADE GROUND (comprised of brown slightly gravell sandy Clay. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of varius lithologies.)		0.25		1 (Seepage)	AA142534	Env	0.50		
1.0					AA147534	Env	1.00		
Grey brown slightly sandy gravelly CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded predominantly of limestone. Cobbles are subrounded of limestone.		1.30							
Brown grey slightly silty sandy fine to coarse subangular to subrounded GRAVEL predominantly of limestone. Low cobble and boulder content. Sand is fine to coare. Cobbles and boulders are subrounded pedominantly of limestone.		1.60			AA142535	B	1.50		
2.0					AA147535	B	2.00		
End of Trial Pit at 2.60m		2.60							
3.0									
4.0									

Groundwater Conditions
Water strike at 0.4

Stability
TP stable

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP08**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	21/12/2020
		DATE COMPLETED	21/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

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 slightly gravell sandy Clay. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of varius lithologies.)		0.25			AA147540	Env	0.50		
Light grey brown slightly sandy slightly gravvelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse subrounded predominantly of limestone. Becoming more gravelly with depth.		0.90		(Slow)	AA142541	B	1.00		
					AA147541	B	2.00		
End of Trial Pit at 2.50m		2.50							

1.0
2.0
3.0
4.0

Groundwater Conditions
several water strikes at 0.90

Stability
TP becoming unstable with depth

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP09**
		SHEET	Sheet 1 of 1
LOGGED BY	P.Cummins	**CO-ORDINATES**	
		DATE STARTED	07/01/2021
		DATE COMPLETED	07/01/2021
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 tonne Mini Digger

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL with frequent rootlets									
Orangish brown gravelly sandy very silty CLAY, frequent rootlets		0.30							
Mottled grey and orange gravelly silty CLAY. Gravel is predominately limestone		0.50			AA143202	B	0.50		
1.0					AA148203	B	1.00		
2.0				1 (Rapid)	AA143204	B	2.00		
End of Trial Pit at 2.50m		2.50							
3.0									
4.0									

Groundwater Conditions
Significant at base, flow from the south, (increases 30cm over 10 mins) Possible water table

Stability
Minor collapse from 1.8 -1.9m

General Remarks
Stopped due to large boulders and excessive water

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP10**
		SHEET	Sheet 1 of 1
LOGGED BY	P.Cummins	**CO-ORDINATES**	
		DATE STARTED	07/01/2021
		DATE COMPLETED	07/01/2021
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 tonne Mini Digger

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
TOPSOIL with frequent rootlets		0.00							
Orange brown, gravelly sandy silty CLAY. Gravel is (fine - course) sub rounded to sub angular of limestone and weathered mudstone, infrequent organics, rootlets, (subsoil)		0.40			AA148201	B	0.50		
Yellow grey gravelly sandy very silty CLAY. Gravel is sub rounded to sub angular of predominately limestone		0.90			AA143201	B	1.50		
				1 (Moderate)	AA148202	B	2.00		
End of Trial Pit at 2.50m		2.50							

Groundwater Conditions
Intermediate flow from base (increases 20cm over 15mins)

Stability
Significant collapse from 1.3m to base

General Remarks
Stopped due to large boulders and excessive water

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP11**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	21/12/2020
		DATE COMPLETED	21/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

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 slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded is fine to medium of various lithologies.)		0.20			AA147536	B	0.50		
					AA142536	B	1.00		
Brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is fine to medium subanular to subrounded predominanly of limestone.		1.20							
Brown grey slightly silty sandy fine to coarse subangular to subrounded GRAVEL predominantly of limestone. Low cobble and boulder content. Sand is fine to coare. Cobbles and boulders		1.50			AA147537	B	1.50		
					AA142537	B	2.00		
End of Trial Pit at 2.60m		2.60			AA142538	B	2.50		
1.0									
2.0									
3.0									
4.0									

Groundwater Conditions
TP dry

Stability
TP stable

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP12**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	21/12/2020
		DATE COMPLETED	21/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.25							
MADE GROUND (comprised of brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded is fine to medium of various lithologies.)		0.70			AA147538	Env	0.50		
Grey brown slightly sandy slightly gravelly silty CLAY with widely spaced medium layers of laminated silt. Sand is fine to coarse. Gravel is fine to coarse subrounded predominantly of limestone					AA142539	B	1.00		
1.0					AA147539	B	1.50		
2.0				1 (Seepage)	AA142540	B	2.00		
End of Trial Pit at 2.50m		2.50							
3.0									
4.0									

Groundwater Conditions
Water strike at 2.20

Stability
TP unstable below 2.20

General Remarks

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP13**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	22/12/2020
		DATE COMPLETED	22/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 MADE GROUND (comprised of brown slightly gravelly sandy CLAY. Sand is fine to coarse. Gravel is subangular to subrounded is fine to medium of various lithologies.)		0.20			AA147546	Env	0.10-0.20		
Light brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded is fine to medium predominantly of limestone.		0.50			AA142547	B	0.50		
Brown grey slightly sandy very clayey fine to coarse angular to subrounded GRAVEL predominantly of limestone. Sand is fine to coarse.									
1.0 Grey brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to coarse subraunded predominantly of limestone. Low cobble content		1.10			AA147547	B	1.00		
					AA142548	B	1.50		
2.0					AA147548	B	2.00		
End of Trial Pit at 2.50m		2.50							
3.0									
4.0									

Groundwater Conditions
TP dry

Stability
TP unstable

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	TP14
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	22/12/2020
		DATE COMPLETED	22/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

Geotechnical Description	Legend	Depth (m)	Elevation	Water Strike	Samples: Sample Ref	Samples: Type	Samples: Depth	Vane Test (KPa)	Hand Penetrometer (KPa)
0.0 TOPSOIL		0.25							
Light brown slightly gravelly slightly sandy silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded is fine to medium predominantly of limestone.		0.55			AA147544	B	0.50		
Brown grey slightly silty slightly clayey silty fine to coarse subangular to subrounded GRAVEL predominantly of limestone. Sand is fine to coase.				1 (Seepage)	AA142544	B	1.00		
1.0									
End of Trial Pit at 1.50m		1.50							
2.0									
3.0									
4.0									

Groundwater Conditions
Water strike at 1.3

Stability
TP very unstable. Collapse at 1.50m

General Remarks

IGSL TP LOG 23046.GPJ IGSL.GDT 14/1/21

TRIAL PIT RECORD

REPORT NUMBER 23046

CONTRACT	Amenity Lands, Sallins,	**TRIAL PIT NO.**	**TP15**
		SHEET	Sheet 1 of 1
LOGGED BY	M.Kluj	**CO-ORDINATES**	
		DATE STARTED	22/12/2020
		DATE COMPLETED	22/12/2020
CLIENT	Kildare County Council	**GROUND LEVEL (m)**	
ENGINEER	DOBA	**EXCAVATION METHOD**	3 T exavator

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							
Brown grey slightly silty slightly clayey sandy fine to coarse subangular to subrounded GRAVEL predominantly of limestone. Sand is fine to coase.					AA147545	Env	0.50		
1.0				(Seepage)	AA142545	B	1.00		
End of Trial Pit at 1.50m		1.50			AA142546	B	1.50		
2.0									
3.0									
4.0									

Groundwater Conditions
Water strike at 1.1

Stability
TP very unstable.Collapse at 1.50m

General Remarks

Appendix II BRE Digest 365 Percolation

Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare — Contract No. 23046
Test No. SA1
Engineer Donnachadh O'Brien & Assoc
Date: 08/01/2021

Summary of ground conditions

from	to	Description	Ground water
0.00	0.05	Soft to firm, Moist brown Gravelly sandy silty clay, MADE GROUND (class 2C)	NONE
0.50	0.80	Soft to firm, Moist, Grey sandy silty CLAY with frequent orgainics and rootlets	
0.80	1.40	Medium dense, Moist, Brown, Gravelly silty clayey SAND	

Notes: Field samples taken at stratum changes

Field Data

Depth to Water (m)	Elapsed Time (min)
1.000	0.00
1.000	1.00
1.000	2.00
1.015	3.00
1.020	4.00
1.035	5.00
1.035	7.00
1.040	9.00
1.050	10.00
1.065	15.00
1.095	20.00
1.100	25.00
1.120	32.00
1.160	50.00
1.170	60.00
1.230	100.00
1.310	160.00
1.360	200.00

Field Test

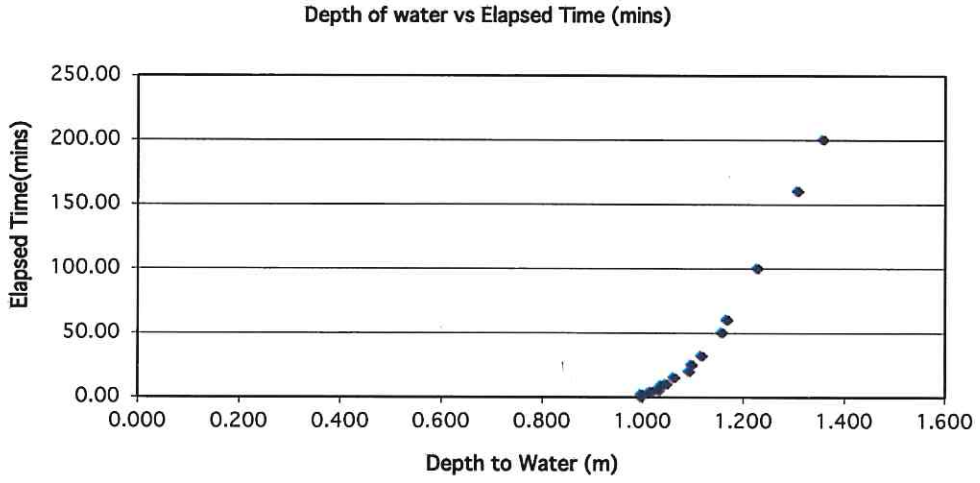
Depth of Pit (D)	1.40	m
Width of Pit (B)	0.60	m
Length of Pit (L)	2.20	m
Initial depth to Water =	1.00	m
Final depth to water =	1.360	m
Elapsed time (mins)=	200.00	
Top of permeable soil		m
Base of permeable soil		m

No fall in water level below 0.68 m

Base area=	1.32	m2
*Av. side area of permeable stratum over test perio	1.232	m2
Total Exposed area =	2.552	m2

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

f= 0.00093 m/min or 1.55172E-05 m/sec



Soakaway Design f -value from field tests IGSL

Contract: Amenity Lands, Sallins, Co.Kildare Contract No. 23046
Test No. SA02 (CYCLE1)
Engineer DOBA
Date: 18/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.10	TOPSOIL	
0.10	0.60	Soft, brown, sandy gravelly CLAY	
0.60	0.90	Loose, dark grey, clayey sandy fine to coarse GRAVEL	DRY
0.90	1.60	Loose, grey, sandy fine to medium GRAVEL	

Field Data

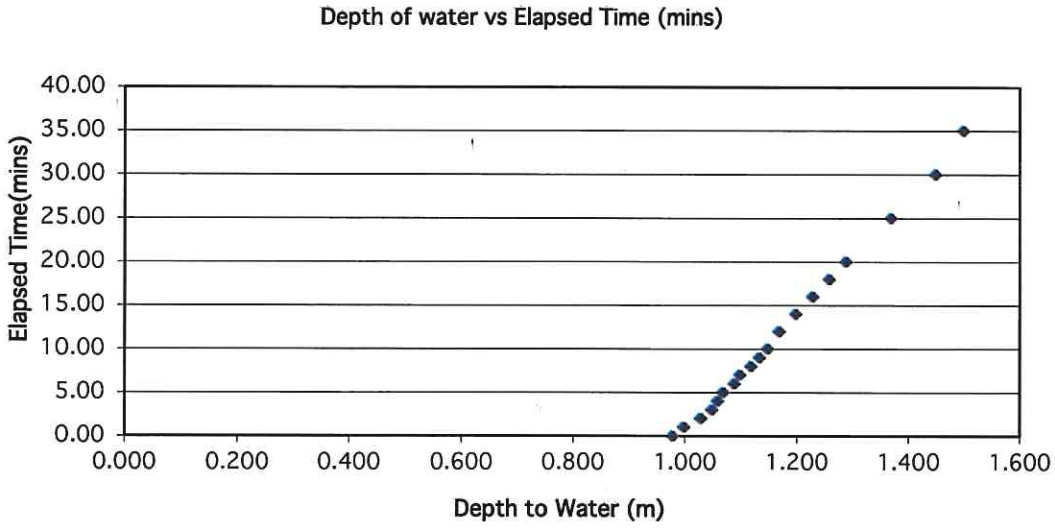
Depth to Water (m)	Elapsed Time (min)
0.980	0.00
1.000	1.00
1.030	2.00
1.050	3.00
1.060	4.00
1.070	5.00
1.090	6.00
1.100	7.00
1.120	8.00
1.135	9.00
1.150	10.00
1.170	12.00
1.200	14.00
1.230	16.00
1.260	18.00
1.290	20.00
1.370	25.00
1.450	30.00
1.500	35.00

Field Test

Depth of Pit (D)	1.60	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m
Initial depth to Water =	0.98	m
Final depth to water =	1.50	m
Elapsed time (mins)=	35.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.75	m2
*Av. side area of permeable stratum over test perio	1.44	m2
Total Exposed area =	2.19	m2

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

f= 0.00509 m/min or 8.4801E-05 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA02 (CYCLE2)
Engineer DOBA
Date: 18/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.10	TOPSOIL	
0.10	0.60	Soft, brown, sandy gravelly CLAY	
0.60	0.90	Loose, dark grey, clayey sandy fine to coarse GRAVEL	DRY
0.90	1.60	Loose, grey, sandy fine to medium GRAVEL	

Field Data

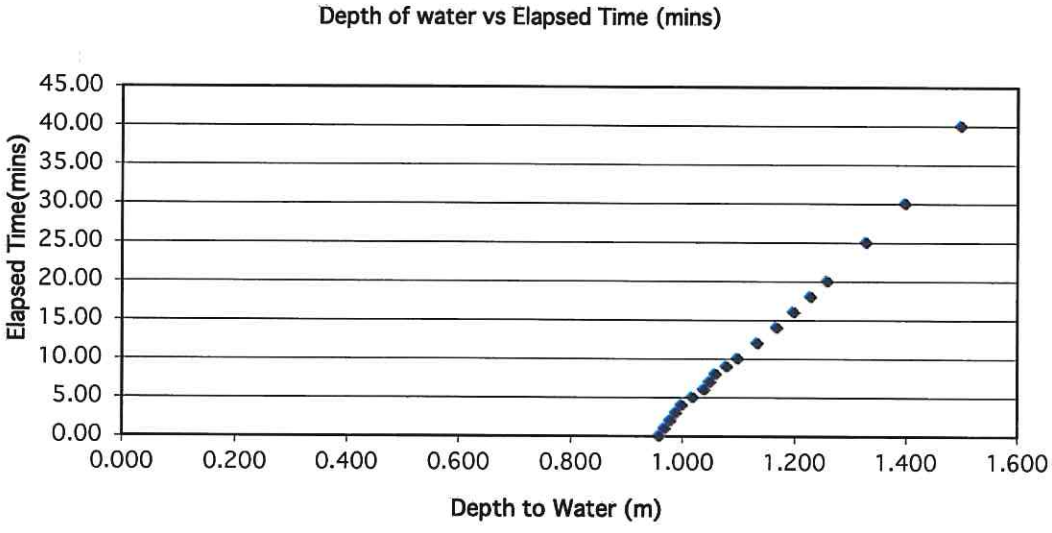
Depth to Water (m)	Elapsed Time (min)
0.960	0.00
0.970	1.00
0.980	2.00
0.990	3.00
1.000	4.00
1.020	5.00
1.040	6.00
1.050	7.00
1.060	8.00
1.080	9.00
1.100	10.00
1.135	12.00
1.170	14.00
1.200	16.00
1.230	18.00
1.260	20.00
1.330	25.00
1.400	30.00
1.500	40.00

Field Test

Depth of Pit (D)	1.60	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m
Initial depth to Water =	0.96	m
Final depth to water =	1.50	m
Elapsed time (mins)=	40.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.75	m2
*Av. side area of permeable stratum over test perio	1.48	m2
Total Exposed area =	2.23	m2

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

f= 0.00454 m/min or 7.56726E-05 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA03
Engineer DOBA
Date: 21/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.25	TOPSOIL	
0.25	0.60	Firm, light greyish brown, slightly sandy slightly gravelly silty CLAY with some lens	
		of laminated silt	DRY
0.60	1.50	Firm, greyish brown, slightly sandy gravelly CLAY	

Field Data

Depth to Water (m)	Elapsed Time (min)
0.590	0.00
0.590	1.00
0.590	2.00
0.590	3.00
0.590	4.00
0.590	5.00
0.590	6.00
0.590	7.00
0.590	8.00
0.590	9.00
0.590	10.00
0.590	12.00
0.590	14.00
0.590	16.00
0.590	18.00
0.590	20.00
0.590	25.00
0.590	30.00
0.590	40.00
0.590	50.00
0.590	60.00

Field Test

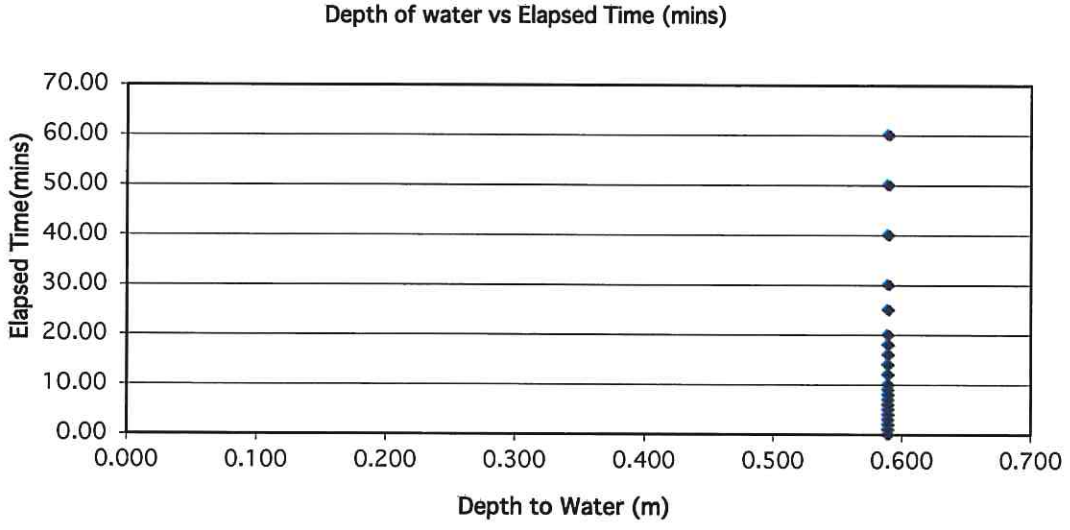
Depth of Pit (D)	1.50	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m
Initial depth to Water =	0.59	m
Final depth to water =	0.59	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m

No any water movement

Base area=	0.75	m2
*Av. side area of permeable stratum over test perio	3.64	m2
Total Exposed area =	4.39	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: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA04
Engineer DOBA
Date: 18/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.10	TOPSOIL	
0.10	0.60	Soft, brown, sandy gravelly CLAY	
0.60	1.50	Soft to firm, dark grey, slightly sandy silty CLAY with occasional plastic pieces (FIL	DRY

Field Data

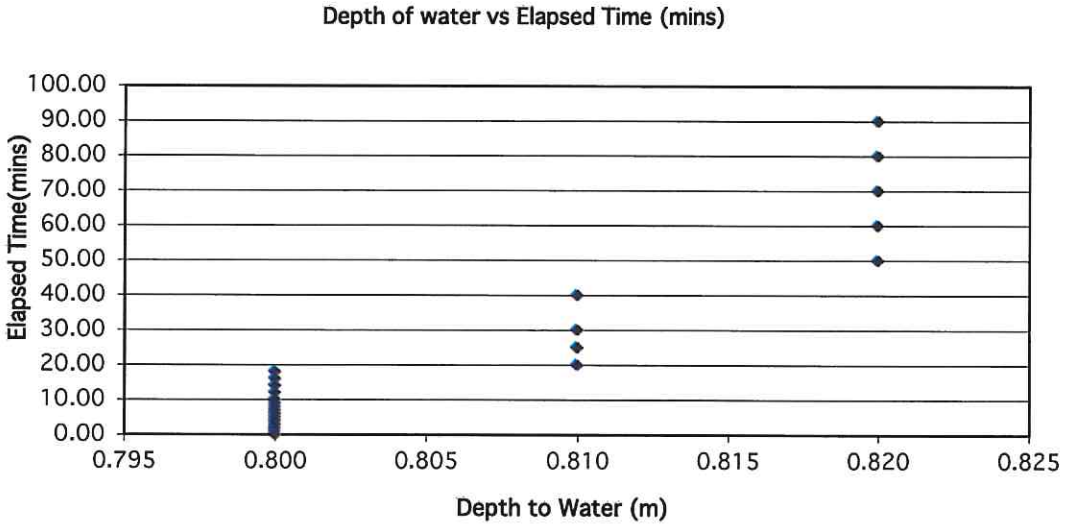
Depth to Water (m)	Elapsed Time (min)
0.800	0.00
0.800	1.00
0.800	2.00
0.800	3.00
0.800	4.00
0.800	5.00
0.800	6.00
0.800	7.00
0.800	8.00
0.800	9.00
0.800	10.00
0.800	12.00
0.800	14.00
0.800	16.00
0.800	18.00
0.810	20.00
0.810	25.00
0.810	30.00
0.810	40.00
0.820	50.00
0.820	60.00
0.820	70.00
0.820	80.00
0.820	90.00

Field Test

Depth of Pit (D)	1.50	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m
Initial depth to Water =	0.80	m
Final depth to water =	0.82	m
Elapsed time (mins)=	90.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.75	m2
*Av. side area of permeable stratum over test perio	2.76	m2
Total Exposed area =	3.51	m2

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

f= 4.7E-05 m/min or 7.9139E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA05
Engineer DOBA
Date: 22/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.25	MADE GROUND (brown sandy slightly gravelly clay)	
0.25	0.50	Firm, light brown, slightly sandy slightly gravelly silty CLAY	
0.50	1.10	Medium dense, brownish grey, slightly sandy very clayey fine to coarse GRAVEL	DRY
1.10	1.50	Firm, greyish brown, slightly sandy gravelly CLAY	

Field Data

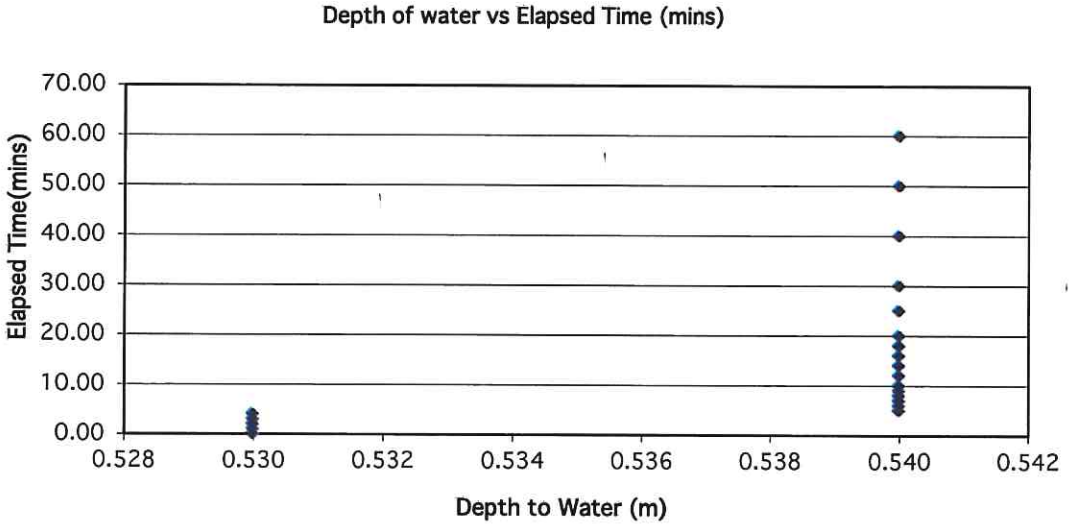
Depth to Water (m)	Elapsed Time (min)
0.530	0.00
0.530	1.00
0.530	2.00
0.530	3.00
0.530	4.00
0.540	5.00
0.540	6.00
0.540	7.00
0.540	8.00
0.540	9.00
0.540	10.00
0.540	12.00
0.540	14.00
0.540	16.00
0.540	18.00
0.540	20.00
0.540	25.00
0.540	30.00
0.540	40.00
0.540	50.00
0.540	60.00

Field Test

Depth of Pit (D)	1.50	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.70	m
Initial depth to Water =	0.53	m
Final depth to water =	0.54	m
Elapsed time (mins)=	60.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.85	m2
*Av. side area of permeable stratum over test perio	4.246	m2
Total Exposed area =	5.096	m2

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

f= 2.8E-05 m/min or 4.63326E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA06
Engineer DOBA
Date: 21/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.25	TOPSOIL	
0.25	0.70	MADE GROUND (brown slightly gravelly sandy CLAY	
0.60	1.50	Firm, light greyish brown, slightly sandy slightly gravelly silty CLAY with some lens	DRY
		of laminated silt	

Field Data

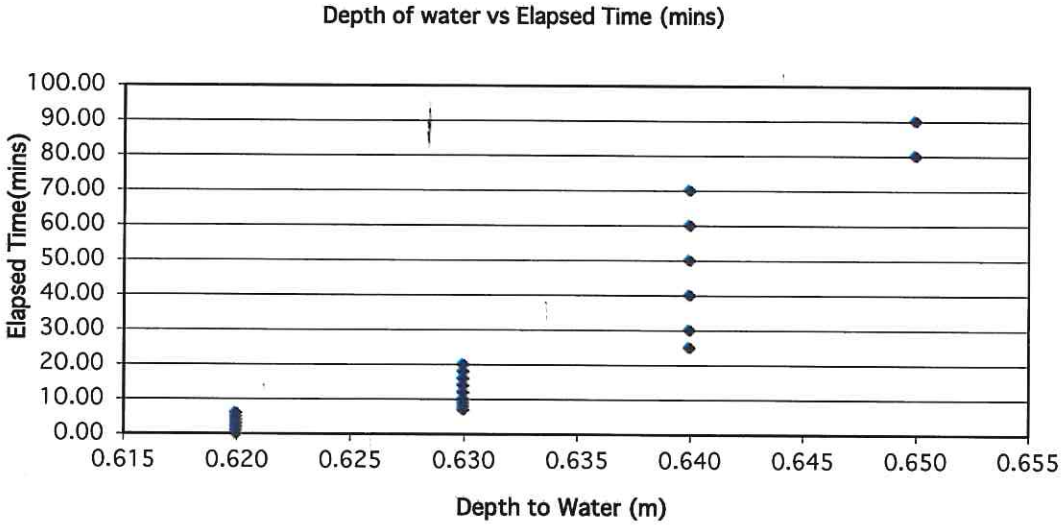
Depth to Water (m)	Elapsed Time (min)
0.620	0.00
0.620	1.00
0.620	2.00
0.620	3.00
0.620	4.00
0.620	5.00
0.620	6.00
0.630	7.00
0.630	8.00
0.630	9.00
0.630	10.00
0.630	12.00
0.630	14.00
0.630	16.00
0.630	18.00
0.630	20.00
0.640	25.00
0.640	30.00
0.640	40.00
0.640	50.00
0.640	60.00
0.640	70.00
0.650	80.00
0.650	90.00

Field Test

Depth of Pit (D)	1.50	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.50	m
Initial depth to Water =	0.62	m
Final depth to water =	0.65	m
Elapsed time (mins)=	90.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.75	m2
*Av. side area of permeable stratum over test perio	3.46	m2
Total Exposed area =	4.21	m2

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

f= 5.9E-05 m/min or 9.89707E-07 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA07 (CYCLE1)
Engineer DOBA
Date: 22/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.30	TOPSOIL	
0.30	1.50	Medium dense brownish grey slightly clayey slightly silty sandy fine to coarse GRA	DRY

Field Data

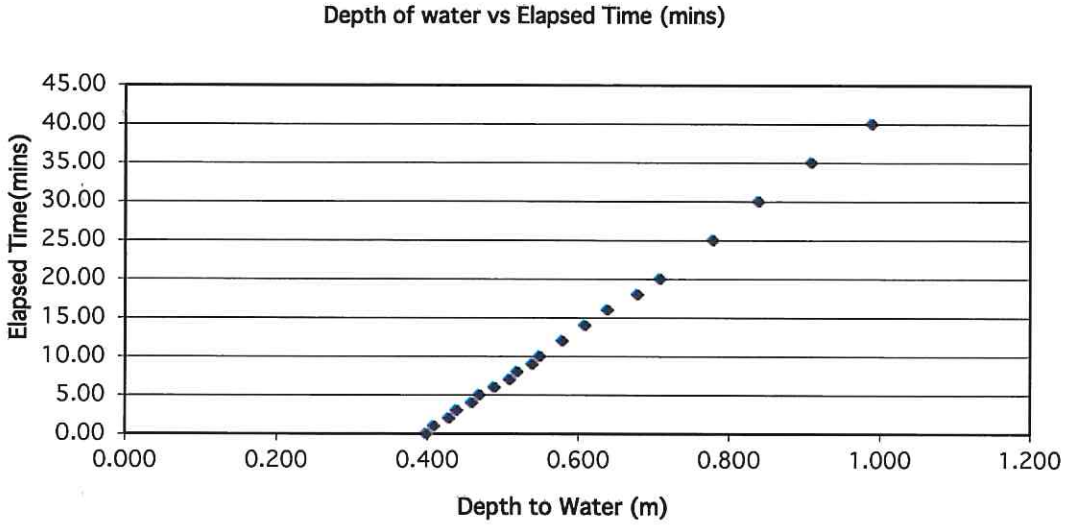
Depth to Water (m)	Elapsed Time (min)
0.400	0.00
0.410	1.00
0.430	2.00
0.440	3.00
0.460	4.00
0.470	5.00
0.490	6.00
0.510	7.00
0.520	8.00
0.540	9.00
0.550	10.00
0.580	12.00
0.610	14.00
0.640	16.00
0.680	18.00
0.710	20.00
0.780	25.00
0.840	30.00
0.910	35.00
0.990	40.00

Field Test

Depth of Pit (D)	1.50	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.70	m
Initial depth to Water =	0.40	m
Final depth to water =	0.99	m
Elapsed time (mins)=	40.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.85	m2
*Av. side area of permeable stratum over test perio	3.542	m2
Total Exposed area =	4.392	m2

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

f= 0.00285 m/min or 4.7577E-05 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA07 (CYCLE2)
Engineer DOBA
Date: 22/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.30	TOPSOIL	DRY
0.30	1.50	Medium dense brownish grey slightly clayey slightly silty sandy fine to coarse GRA	

Field Data

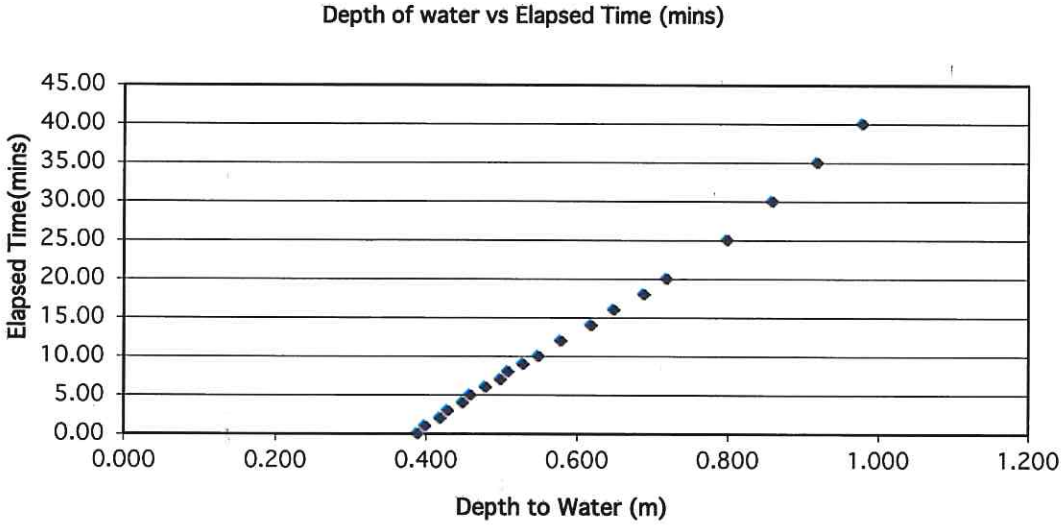
Depth to Water (m)	Elapsed Time (min)
0.390	0.00
0.400	1.00
0.420	2.00
0.430	3.00
0.450	4.00
0.460	5.00
0.480	6.00
0.500	7.00
0.510	8.00
0.530	9.00
0.550	10.00
0.580	12.00
0.620	14.00
0.650	16.00
0.690	18.00
0.720	20.00
0.800	25.00
0.860	30.00
0.920	35.00
0.980	40.00

Field Test

Depth of Pit (D)	1.50	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.70	m
Initial depth to Water =	0.39	m
Final depth to water =	0.98	m
Elapsed time (mins)=	40.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.85	m2
*Av. side area of permeable stratum over test perio	3.586	m2
Total Exposed area =	4.436	m2

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

f= 0.00283 m/min or 4.71051E-05 m/sec



Soakaway Design f -value from field tests

IGSL

Contract: Amenity Lands, Sallins, Co.Kildare
Contract No. 23046
Test No. SA07 (CYCLE3)
Engineer DOBA
Date: 22/12/2020

Summary of ground conditions

from	to	Description	Ground water
0.00	0.30	TOPSOIL	
0.30	1.50	Medium dense brownish grey slightly clayey slightly silty sandy fine to coarse GRA	DRY

Field Data

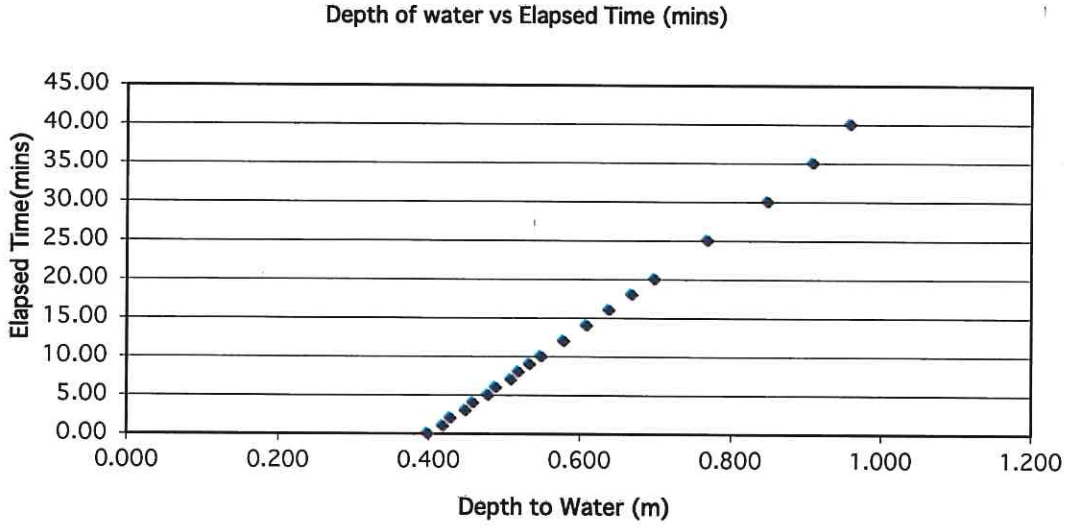
Depth to Water (m)	Elapsed Time (min)
0.400	0.00
0.420	1.00
0.430	2.00
0.450	3.00
0.460	4.00
0.480	5.00
0.490	6.00
0.510	7.00
0.520	8.00
0.535	9.00
0.550	10.00
0.580	12.00
0.610	14.00
0.640	16.00
0.670	18.00
0.700	20.00
0.770	25.00
0.850	30.00
0.910	35.00
0.960	40.00

Field Test

Depth of Pit (D)	1.50	m
Width of Pit (B)	0.50	m
Length of Pit (L)	1.70	m
Initial depth to Water =	0.40	m
Final depth to water =	0.96	m
Elapsed time (mins)=	40.00	
Top of permeable soil		m
Base of permeable soil		m
Base area=	0.85	m2
*Av. side area of permeable stratum over test perio	3.608	m2
Total Exposed area =	4.458	m2

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

f= 0.00267 m/min or 4.44893E-05 m/sec



Appendix III CBR by Plate Test

PLATE TEST REPORT SHEET (F3.1)

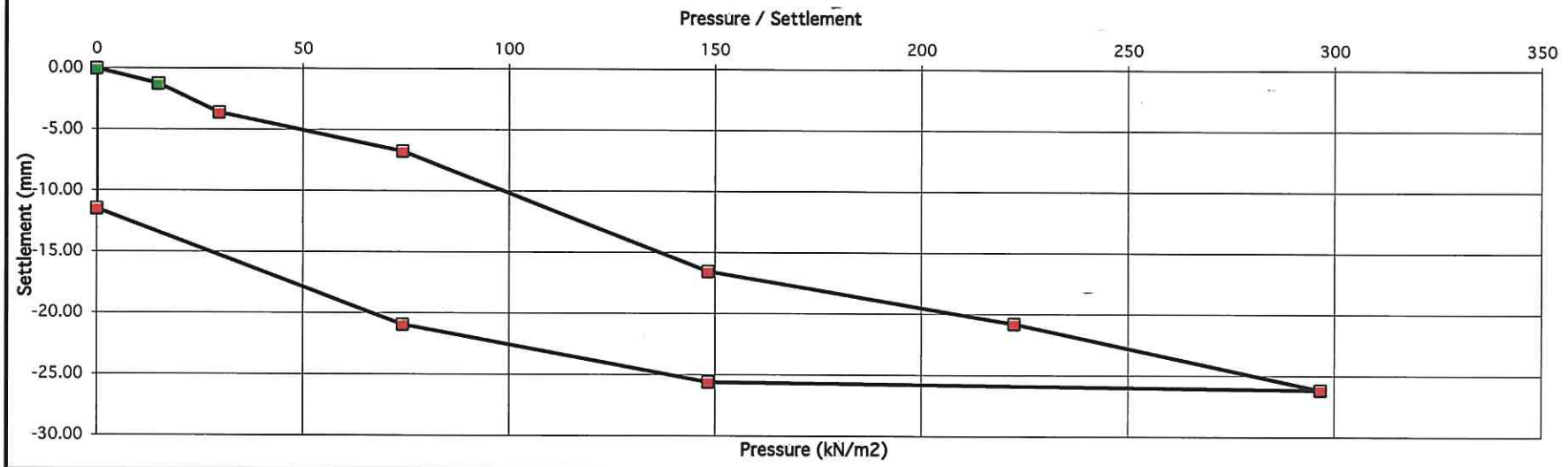
Applied Pressure/Settlement Curve

Reference No.	R118787
Contract	23046 Amenity Lands, Sallins,
Test No.	CBR01 Load
Location	See location map
Depth	Surface
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	08/01/2021

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

Gravelly sandy silty clay, MADE GROUND

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 12
Modulus of subgrade reaction = 5 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 0.2 %

PLATE TEST REPORT SHEET (F3.1)

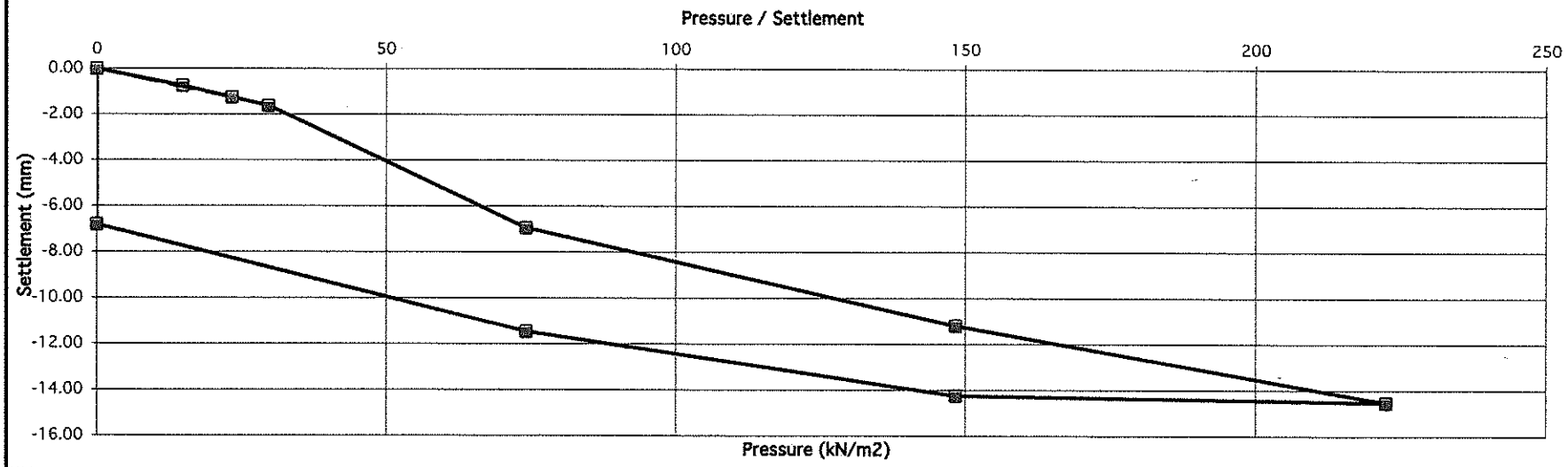
Reference No.	R118787
Contract	23046 - Amenity Lands, Sallins,
Test No.	CBR01 ReLoad
Location	See location map
Depth	Surface
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	08/01/2021

Applied Pressure/Settlement Curve

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

Gravelly sandy silty clay, MADE GROUND

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 19
Modulus of subgrade reaction = 9 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 0.4 %

PLATE TEST REPORT SHEET (F3.1)

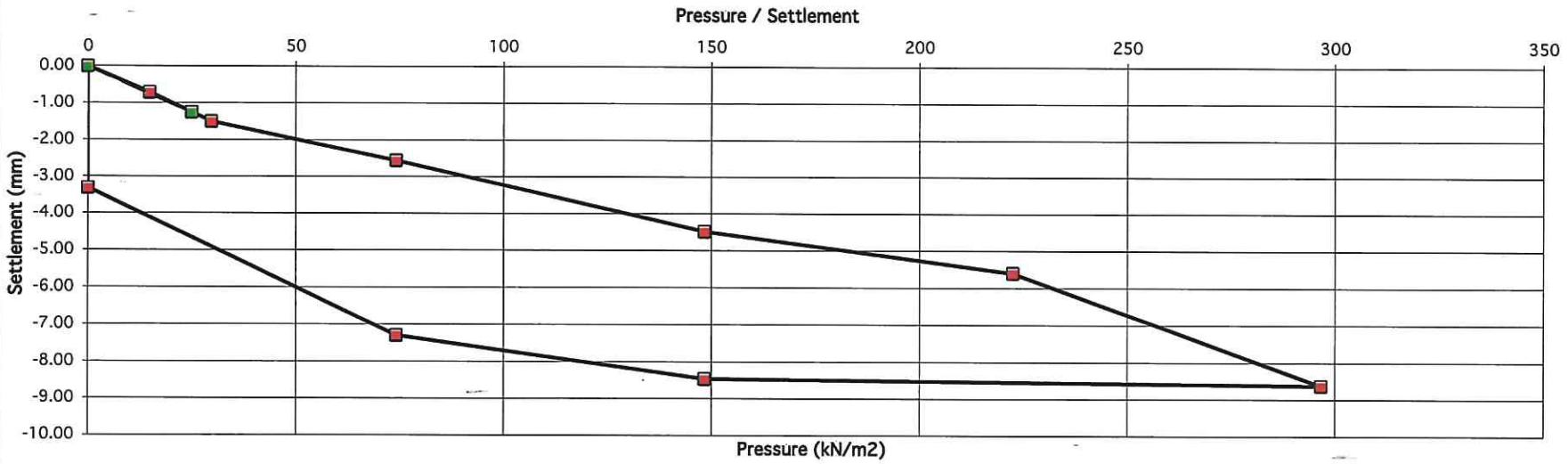
Reference No.	R118788
Contract	23046- Amenity Lands, Sallins,
Test No.	CBR02 Load
Location	See location map
Depth	0.5m below ground level
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	07/01/2021

Applied Pressure/Settlement Curve

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

Yellowish Brown, Gravelly sandy silty CLAY

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 20
Modulus of subgrade reaction = 9 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 0.4 %

PLATE TEST REPORT SHEET (F3.1)

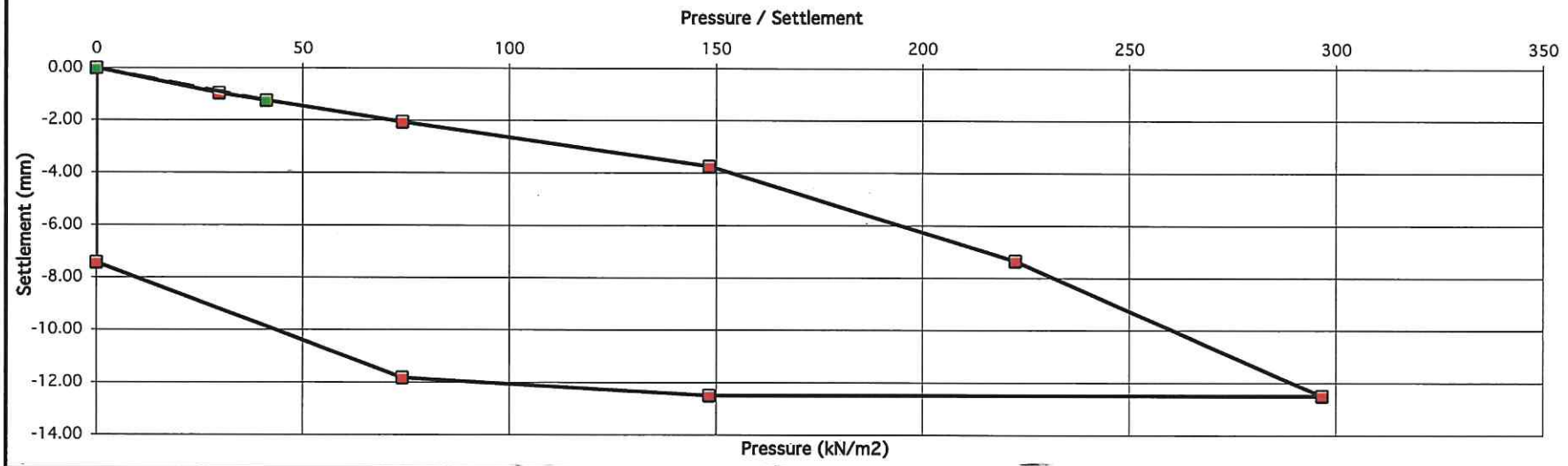
Applied Pressure/Settlement Curve

Reference No.	R118788
Contract	23046- Amenity Lands, Sallins
Test No.	CBR02 ReLoad
Location	See location map
Depth	0.5m below ground level
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	07/01/2021

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

Yellowish Brown, Gravelly sandy silty CLAY

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 33
Modulus of subgrade reaction = 15 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 1.1 %

PLATE TEST REPORT SHEET (F3.1)

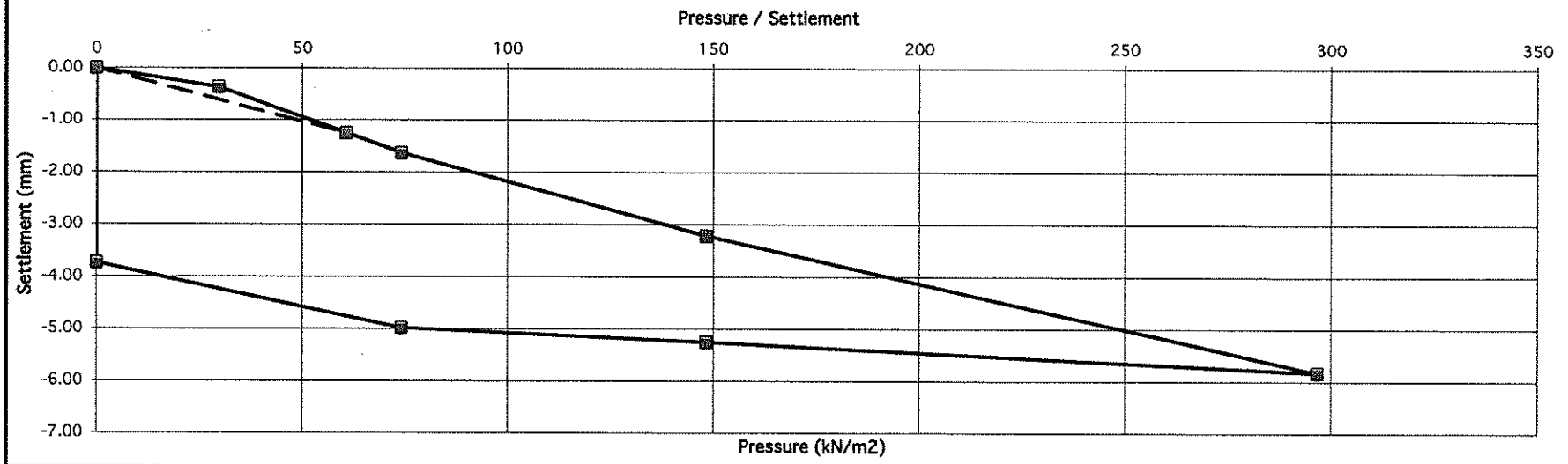
Applied Pressure/Settlement Curve

Reference No.	R118789
Contract	23046- Amenity Lands, Sallins,
Test No.	CBR03 Load
Location	See location map
Depth	Surface
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	07/01/2021

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

Gravelly sandy silty clay, MADE GROUND

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 49
Modulus of subgrade reaction = 22 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 2.1 %

PLATE TEST REPORT SHEET (F3.1)

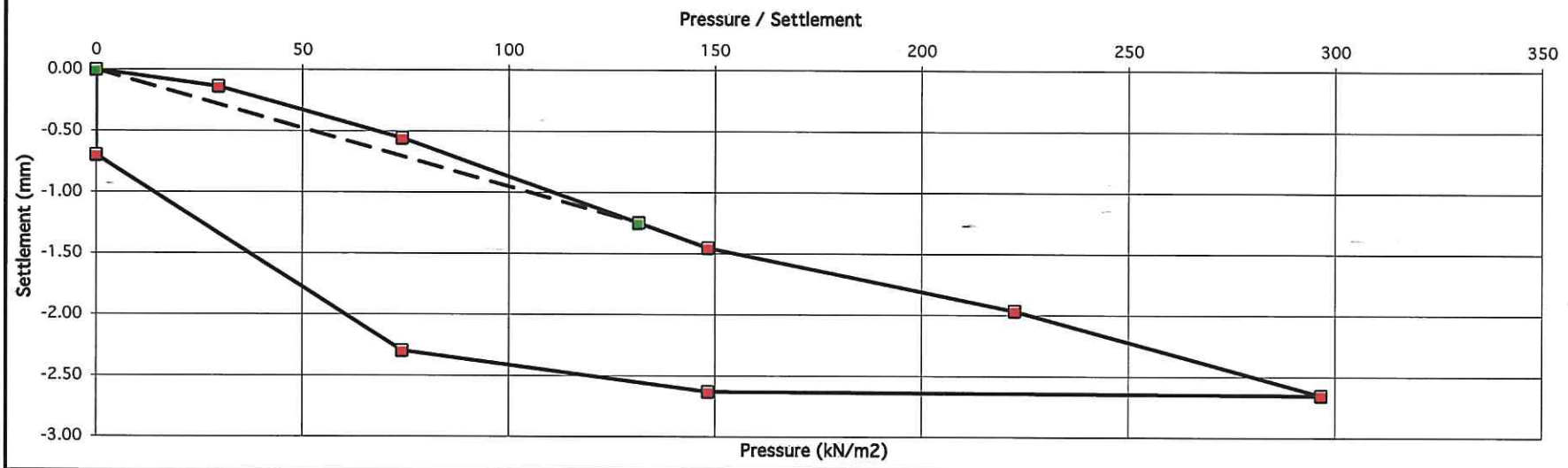
Applied Pressure/Settlement Curve

Reference No.	R118789
Contract	23046- Amenity Lands, Sallins,
Test No.	CBR03 ReLoad
Location	See location map
Depth	Surface
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	07/01/2021

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

Gravelly sandy silty clay, MADE GROUND

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 105
Modulus of subgrade reaction = 48 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

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

PLATE TEST REPORT SHEET (F3.1)

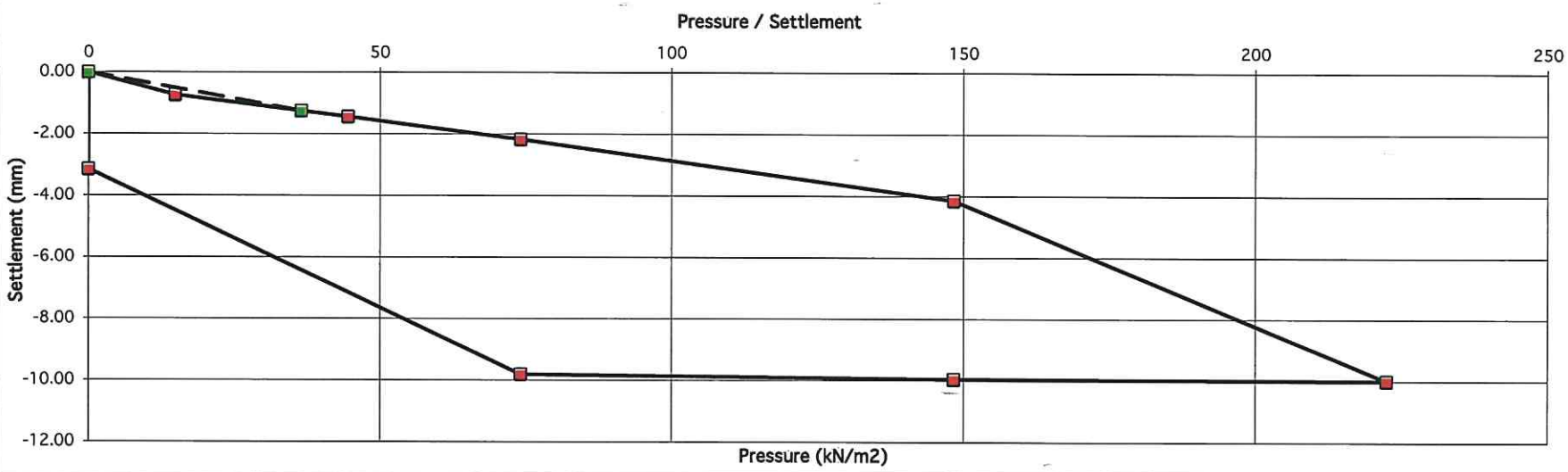
Applied Pressure/Settlement Curve

Reference No.	R118790
Contract	23046- Amenity Lands, Sallins
Test No.	CBR04 Load
Location	See location map
Depth	0.3m below ground level
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	07/01/2021

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

Greyish Brown, slightly gravelly very silty CLAY

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 29
Modulus of subgrade reaction = 13 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 0.9 %

PLATE TEST REPORT SHEET (F3.1)

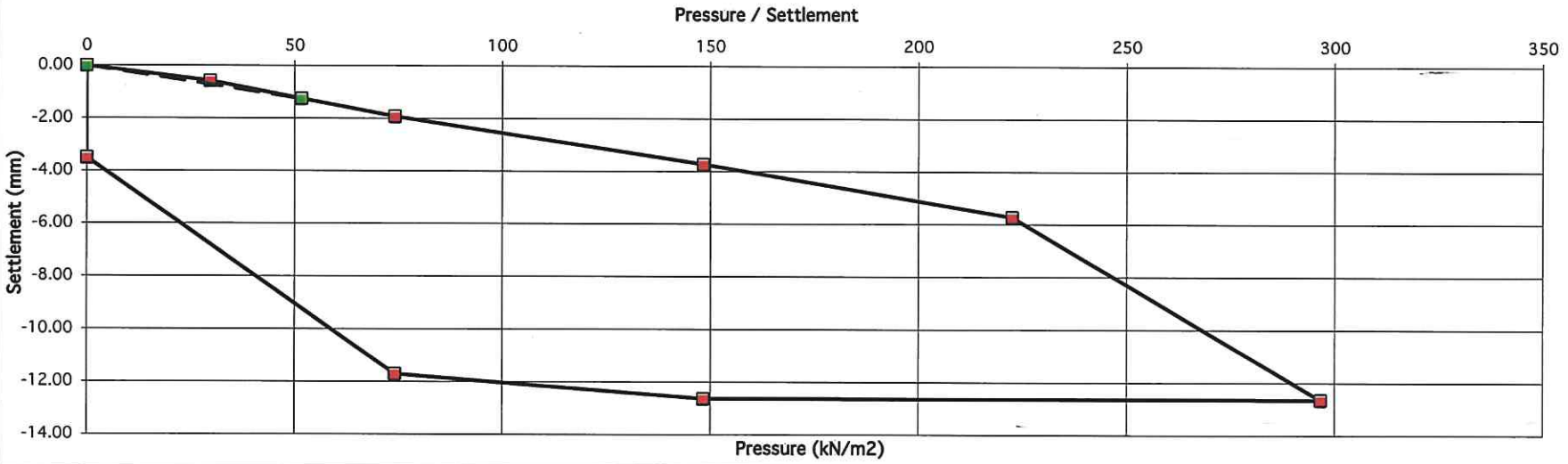
Applied Pressure/Settlement Curve

Reference No.	R118790
Contract	23046- Amenity Lands, Sallins
Test No.	CBR04 ReLoad
Location	See location map
Depth	0.3m below ground level
Client	Kildare County Council
Plate Diameter:	300 mm
Test Method	BS 1377: Part 9: 1990 Test4 - Incremental Loading Test
Technician	Paul Cummins
Authorised by	H. Byrne
Date	07/01/2021

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

Greyish Brown, slightly gravelly very silty CLAY

Sample Ref No. N/A
Depth 0.00 m bgl



Gradient at 1.25 mm settlement intersection = 41
Modulus of subgrade reaction = 19 MPa/m
Correction factor applied = 0.46 as per HD 25-26/10

Equivalent CBR value in accordance with NRA HD25-26/10 1.6 %

Appendix IV Environmental Laboratory

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	21-01431-1		
Initial Date of Issue:	27-Jan-2021		
Client	IGSL		
Client Address:	M7 Business Park Naas County Kildare Ireland		
Contact(s):	Darren Keogh		
Project	23046 Sallins Amenity Lands (DOBA)		
Quotation No.:	Q20-19951	**Date Received:**	19-Jan-2021
Order No.:		**Date Instructed:**	19-Jan-2021
No. of Samples:	5		
Turnaround (Wkdays):	7	**Results Due:**	27-Jan-2021
Date Approved:	27-Jan-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Leachate

Project: 23046 Sallins Amenity Lands (DOBA)

Client: IGSL				Chemtest Job No.:		21-01431	21-01431	21-01431	21-01431	21-01431
Quotation No.: Q20-19951				Chemtest Sample ID.:		1127068	1127069	1127070	1127071	1127072
Order No.:				Client Sample Ref.:		148204	147531	147540	147536	147545
				Sample Location:		TP1	TP3	TP8	TP11	TP15
				Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):		0.50	0.20	0.25	0.30	0.50
				Bottom Depth (m):		1.50	0.70	0.90	1.00	1.00
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**					
pH	U	1010	10:1		N/A	8.7	8.4	8.5	8.4	8.1
Ammonium	U	1220	10:1	mg/l	0.050	< 0.050	0.23	< 0.050	< 0.050	0.082
Ammonium	N	1220	10:1	mg/kg	0.10	0.54	2.6	0.45	0.44	0.88
Boron (Dissolved)	U	1450	10:1	mg/kg	0.20	0.49	0.38	< 0.20	< 0.20	< 0.20
Benzo[j]fluoranthene	N	1800	10:1	µg/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: 23046 Sallins Amenity Lands (DOBA)

Client: IGSL					Chemtest Job No.:	21-01431	21-01431	21-01431	21-01431	21-01431
Quotation No.: Q20-19951					Chemtest Sample ID.:	1127068	1127069	1127070	1127071	1127072
Order No.:					Client Sample Ref.:	148204	147531	147540	147536	147545
					Sample Location:	TP1	TP3	TP8	TP11	TP15
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	0.20	0.25	0.30	0.50
					Bottom Depth (m):	1.50	0.70	0.90	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		N/A		No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A		-	-	-	-	-
Moisture	N	2030	%	0.020		8.1	10	14	15	17
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40		[A] 0.55	[A] 0.43	[A] 0.45	[A] 0.47	[A] < 0.40
Sulphur (Elemental)	U	2180	mg/kg	1.0		[A] 2.9	[A] 2.8	[A] 2.3	[A] 1.5	[A] 1.4
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] 8.8	[A] 2.7	[A] 4.2	[A] 3.7	[A] 1.9
Sulphate (Acid Soluble)	U	2430	%	0.010		[A] 0.042	[A] 0.037	[A] 0.025	[A] 0.061	[A] 0.092
Arsenic	U	2450	mg/kg	1.0		28	11	11	14	11
Barium	U	2450	mg/kg	10		80	140	92	72	110
Cadmium	U	2450	mg/kg	0.10		1.2	1.1	1.8	1.4	1.3
Chromium	U	2450	mg/kg	1.0		17	22	25	24	20
Molybdenum	U	2450	mg/kg	2.0		< 2.0	2.1	< 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		19	15	15	22	23
Mercury	U	2450	mg/kg	0.10		< 0.10	< 0.10	< 0.10	0.11	0.19
Nickel	U	2450	mg/kg	0.50		29	20	36	35	24
Lead	U	2450	mg/kg	0.50		100	110	39	46	59
Selenium	U	2450	mg/kg	0.20		0.28	0.59	0.37	0.43	0.92
Zinc	U	2450	mg/kg	0.50		120	93	86	110	91
Chromium (Trivalent)	N	2490	mg/kg	1.0		17	22	25	24	20
Chromium (Hexavalent)	N	2490	mg/kg	0.50		< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
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] < 1.0
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

Results - Soil

Project: 23046 Sallins Amenity Lands (DOBA)

Client: IGSL				Chemtest Job No.:	21-01431	21-01431	21-01431	21-01431	21-01431
Quotation No.: Q20-19951				Chemtest Sample ID.:	1127068	1127069	1127070	1127071	1127072
Order No.:				Client Sample Ref.:	148204	147531	147540	147536	147545
				Sample Location:	TP1	TP3	TP8	TP11	TP15
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.50	0.20	0.25	0.30	0.50
				Bottom Depth (m):	1.50	0.70	0.90	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] < 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0	[A] < 1.0
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] < 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	[A] < 10	[A] < 10	[A] < 10	[A] < 10	[A] < 10
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	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Acenaphthylene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Acenaphthene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Fluorene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Phenanthrene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] 0.33
Anthracene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] 0.057
Fluoranthene	N	2800	mg/kg	0.010	[A] 0.11	[A] 0.17	[A] < 0.010	[A] < 0.010	[A] 0.40
Pyrene	N	2800	mg/kg	0.010	[A] 0.10	[A] 0.16	[A] < 0.010	[A] < 0.010	[A] 0.33
Benzo[a]anthracene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] 0.22
Chrysene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] 0.22
Benzo[b]fluoranthene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] 0.24
Benzo[k]fluoranthene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] 0.11
Benzo[a]pyrene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] 0.21
Indeno(1,2,3-c,d)Pyrene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Benzo[g,h,i]perylene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Coronene	N	2800	mg/kg	0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total Of 17 PAH's	N	2800	mg/kg	0.20	[A] 0.21	[A] 0.33	[A] < 0.20	[A] < 0.20	[A] 2.1
PCB 28	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010
PCB 52	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010
PCB 90+101	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010
PCB 118	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010
PCB 153	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010
PCB 138	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010
PCB 180	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010
Total PCBs (7 congeners)	N	2815	mg/kg	0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010	[A] < 0.0010

Results - Soil

Project: 23046 Sallins Amenity Lands (DOBA)

Client: IGSL									
Quotation No.: Q20-19951				Chemtest Job No.:	21-01431	21-01431	21-01431	21-01431	21-01431
Order No.:				Chemtest Sample ID.:	1127068	1127069	1127070	1127071	1127072
				Client Sample Ref.:	148204	147531	147540	147536	147545
				Sample Location:	TP1	TP3	TP8	TP11	TP15
				Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL
				Top Depth (m):	0.50	0.20	0.25	0.30	0.50
				Bottom Depth (m):	1.50	0.70	0.90	1.00	1.00
				Asbestos Lab:	COVENTRY	COVENTRY	COVENTRY	COVENTRY	COVENTRY
Determinand	**Accred.**	**SOP**	**Units**	**LOD**					
Total Phenols	U	2920	mg/kg	0.30	< 0.30	< 0.30	< 0.30	< 0.30	< 0.30

Results - Single Stage WAC

Project: 23046 Sallins Amenity Lands (DOBA)

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-01431						
Chemtest Sample ID:	1127068						
Sample Ref:	148204						
Sample ID:							
Sample Location:	TP1						
Top Depth(m):	0.50						
Bottom Depth(m):	1.50						
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] 0.55	3	5	6
Loss On Ignition	2610	U	%	2.9	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 congeners)	2815	N	mg/kg	[A] < 0.0010	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total Of 17 PAH's	2800	N	mg/kg	[A] 0.21	100	--	--
pH	2010	U		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.017	--	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	0.0058	0.058	0.5	2	25
Barium	1450	U	0.012	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	0.0094	0.094	0.5	10	70
Copper	1450	U	0.0038	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0029	< 0.050	0.5	10	30
Nickel	1450	U	0.0019	< 0.050	0.4	10	40
Lead	1450	U	< 0.0010	< 0.010	0.5	10	50
Antimony	1450	U	0.0011	0.011	0.06	0.7	5
Selenium	1450	U	0.0025	0.025	0.1	0.5	7
Zinc	1450	U	0.0042	< 0.50	4	50	200
Chloride	1220	U	1.1	11	800	15000	25000
Fluoride	1220	U	0.20	2.0	10	150	500
Sulphate	1220	U	8.6	86	1000	20000	50000
Total Dissolved Solids	1020	N	78	780	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	10	100	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	8.1

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: 23046 Sallins Amenity Lands (DOBA)

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-01431						
Chemtest Sample ID:	1127069						
Sample Ref:	147531						
Sample ID:							
Sample Location:	TP3						
Top Depth(m):	0.20						
Bottom Depth(m):	0.70						
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] 0.56	3	5	6
Loss On Ignition	2610	U	%	2.2	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 congeners)	2815	N	mg/kg	[A] < 0.0010	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total Of 17 PAH's	2800	N	mg/kg	[A] 0.33	100	--	--
pH	2010	U		8.2	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.014	--	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	0.0037	< 0.50	20	100	300
Cadmium	1450	U	< 0.00010	< 0.010	0.04	1	5
Chromium	1450	U	0.0082	0.082	0.5	10	70
Copper	1450	U	0.0045	< 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	0.0015	0.015	0.1	0.5	7
Zinc	1450	U	0.0044	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.21	2.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	72	710	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	13	130	500	800	1000

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

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: 23046 Sallins Amenity Lands (DOBA)

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-01431						
Chemtest Sample ID:	1127070						
Sample Ref:	147540						
Sample ID:							
Sample Location:	TP8						
Top Depth(m):	0.25						
Bottom Depth(m):	0.90						
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] 0.43	3	5	6
Loss On Ignition	2610	U	%	3.0	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 congeners)	2815	N	mg/kg	[A] < 0.0010	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total Of 17 PAH's	2800	N	mg/kg	[A] < 0.20	100	--	--
pH	2010	U		8.8	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.011	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	0.021	< 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	0.0012	< 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	0.0019	< 0.50	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.25	2.5	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	65	650	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	13	130	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	14

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: 23046 Saltins Amenity Lands (DOBA)

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-01431						
Chemtest Sample ID:	1127071						
Sample Ref:	147536						
Sample ID:							
Sample Location:	TP11						
Top Depth(m):	0.30						
Bottom Depth(m):	1.00						
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] 1.1	3	5	6
Loss On Ignition	2610	U	%	4.7	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 congeners)	2815	N	mg/kg	[A] < 0.0010	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total Of 17 PAH's	2800	N	mg/kg	[A] < 0.20	100	--	--
pH	2010	U		8.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.016	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	0.0070	< 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	0.0019	< 0.050	2	50	100
Mercury	1450	U	< 0.00050	< 0.0050	0.01	0.2	2
Molybdenum	1450	U	0.0022	< 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	0.0026	< 0.50	4	50	200
Chloride	1220	U	1.4	14	800	15000	25000
Fluoride	1220	U	0.27	2.7	10	150	500
Sulphate	1220	U	12	120	1000	20000	50000
Total Dissolved Solids	1020	N	85	840	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	7.8	78	500	800	1000

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

Waste Acceptance Criteria

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

Results - Single Stage WAC

Project: 23046 Sallins Amenity Lands (DOBA)

Chemtest Job No:	21-01431				Landfill Waste Acceptance Criteria Limits		
Chemtest Sample ID:	1127072						
Sample Ref:	147545						
Sample ID:							
Sample Location:	TP15						
Top Depth(m):	0.50						
Bottom Depth(m):	1.00						
Sampling Date:					Inert Waste Landfill	Stable, Non-reactive hazardous waste in non-hazardous Landfill	Hazardous Waste Landfill
Determinand	**SOP**	**Accred.**	**Units**				
Total Organic Carbon	2625	U	%	[A] 2.7	3	5	6
Loss On Ignition	2610	U	%	7.2	--	--	10
Total BTEX	2760	U	mg/kg	[A] < 0.010	6	--	--
Total PCBs (7 congeners)	2815	N	mg/kg	[A] < 0.0010	1	--	--
TPH Total WAC (Mineral Oil)	2670	U	mg/kg	[A] < 10	500	--	--
Total Of 17 PAH's	2800	N	mg/kg	[A] 2.1	100	--	--
pH	2010	U		7.9	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0030	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1450	U	< 0.0010	< 0.050	0.5	2	25
Barium	1450	U	0.012	< 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	0.0029	< 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	0.21	2.1	10	150	500
Sulphate	1220	U	< 1.0	< 10	1000	20000	50000
Total Dissolved Solids	1020	N	91	910	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	10	100	500	800	1000

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

Waste Acceptance Criteria

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

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:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1127068	148204		TP1		A	Amber Glass 250ml
1127068	148204		TP1		A	Plastic Tub 500g
1127069	147531		TP3		A	Amber Glass 250ml
1127069	147531		TP3		A	Plastic Tub 500g
1127070	147540		TP8		A	Amber Glass 250ml
1127070	147540		TP8		A	Plastic Tub 500g
1127071	147536		TP11		A	Amber Glass 250ml
1127071	147536		TP11		A	Plastic Tub 500g
1127072	147545		TP15		A	Amber Glass 250ml
1127072	147545		TP15		A	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
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
1800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Waters 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	Pentane extraction / GCMS detection
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.

Test Methods

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

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

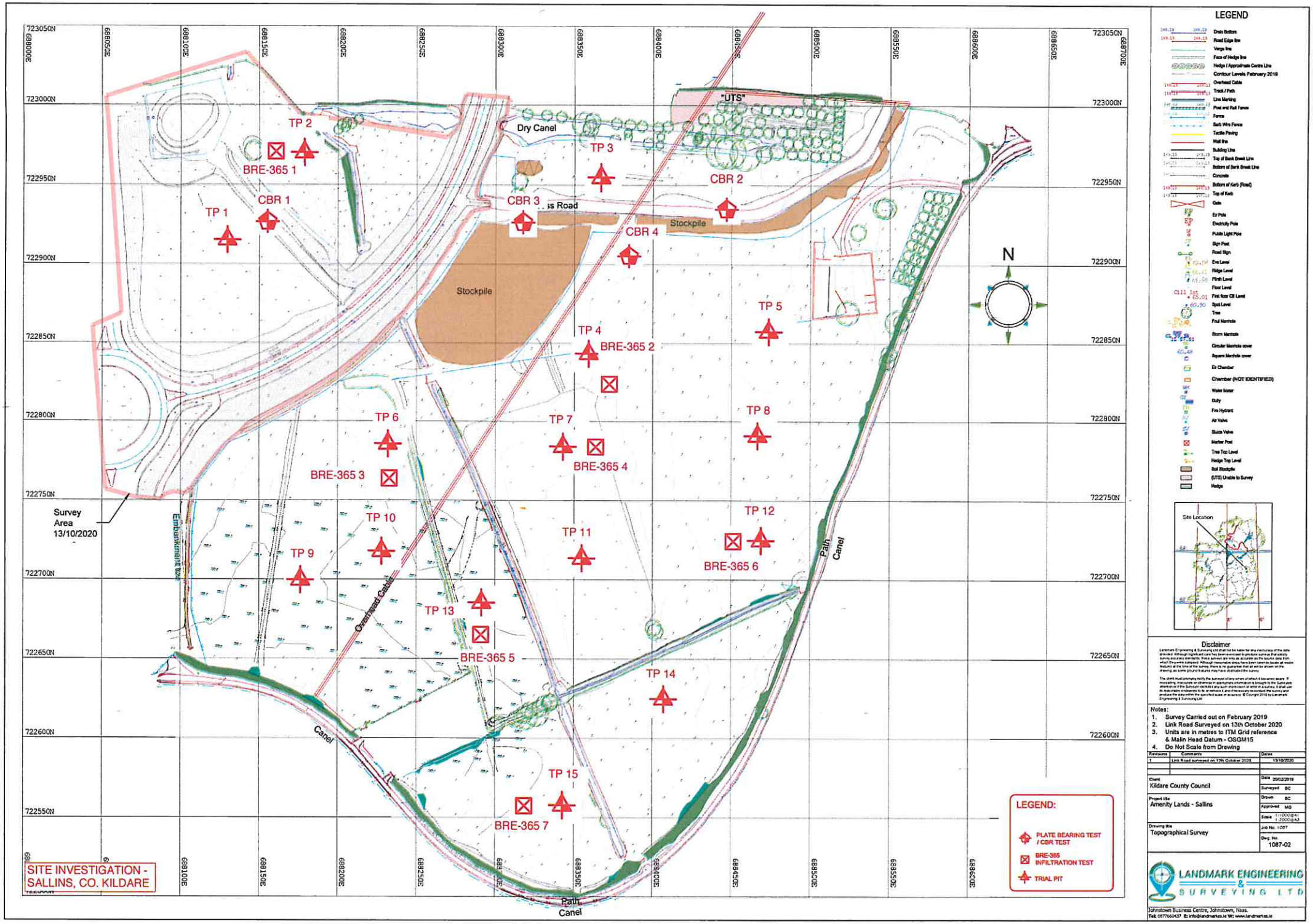
A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 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.com

Appendix V Site Plan


TP 1
TP 2
BRE-365 1
CBR 1
CBR 2
CBR 3
CBR 4
TP 3
TP 4
BRE-365 2
TP 5
TP 6
BRE-365 3
TP 7
BRE-365 4
TP 8
TP 9
TP 10
TP 11
TP 12
BRE-365 6
TP 13
BRE-365 5
TP 14
TP 15
BRE-365 7
Dry Canel
"UTS"
Stockpile
Stockpile
Survey Area 13/10/2020
Embankment to be
Overhead Cables
Canel
Path
Canel
Path
N
SITE INVESTIGATION - SALLINS, CO. KILDARE
LEGEND:
PLATE BEARING TEST / CBR TEST
BRE-365 INFILTRATION TEST
TRIAL PIT
LEGEND
Site Location
Disclaimer
Notes:
1. Survey Carried out on February 2019
2. Link Road Surveyed on 13th October 2020
3. Units are in metres to ITM Grid reference & Malin Head Datum - OSGM15
4. Do Not Scale from Drawing
Revisions
Comments
Dates
1 Link Road surveyed on 13th October 2020 13/10/2020
Client: Kildare County Council
Project title: Amenity Lands - Sallins
Drawing title: Topographical Survey
Date: 25/02/2019
Surveyed: BC
Drawn: BC
Approved: MG
Scale: 1:1000@A1 1:2000@A3
Job No. 1087
Dwg. No. 1087-02
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