

Catherinestown House, Hazelhatch Road, Newcastle, Co. Dublin. D22 YD52

Tel: 01 601 5175 / 5176 Email: info@gii.ie Web: www.gii.ie

Ground Investigations Ireland

Tinahask Co. Wicklow

Hayes Higgins

Ground Investigation Report

August 2023



Directors: Fergal McNamara (MD), Conor Finnerty, Aisling McDonnell, Barry Sexton & Stephen Kealy Ground Investigations Ireland Limited | Registered in Ireland Company Registration No.: 405726



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Tel: 01 601 5175 / 5176 Email: info@gii.ie Web: www.gii.ie

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 Web:
 www.gii.ie

GROUND INVESTIGATIONS IRELAND

Geotechnical & Environmental

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1.0 Preamble

On the instructions of Hayes Higgins Engineers, a site investigation was carried out by Ground Investigations Ireland Ltd., between 11/7/2023 and 03/08/2023 at the site of the proposed residential development in Tinahask, Arklow, Co. Wicklow.

2.0 Overview

2.1. Background

It is proposed to construct a new residential development with associated services, access roads and car parking at the proposed site. The site is currently greenfield. The proposed construction is envisaged to consist of conventional foundations and pavement make up with some local excavations for services and plant.

2.2. Purpose and Scope

The purpose of the site investigation was to investigate subsurface conditions utilising a variety of investigative methods in accordance with the project specification. The scope of the work undertaken for this project included the following:

- Visit project site to observe existing conditions
- Carry out 20 No. Trial Pits to a maximum depth of 4.5m BGL
- Carry out 6 No. Soakaways to determine a soil infiltration value to BRE digest 365
- Carry out 33 No. Dynamic Probes to determine soil strength/density characteristics
- Report with recommendations

3.0 Subsurface Exploration

3.1. General

During the ground investigation a programme of intrusive investigation specified by the Consulting Engineer was undertaken to determine the sub surface conditions at the proposed site. Regular sampling and insitu testing was undertaken in the exploratory holes to facilitate the geotechnical descriptions. The procedures used in this site investigation are in accordance with Eurocode 7 Part 2: Ground Investigation and testing (ISEN 1997 – 2:2007) and B.S. 5930:2015.

3.2. Trial Pits

The trial pits were excavated using an 8T tracked excavator at the locations shown in the exploratory hole location plan in Appendix 1. The locations were checked using a CAT scan to minimise the potential for encountering services during the excavation. The trial pits were sampled, logged and photographed by a Geotechnical Engineer/Engineering Geologist prior to backfilling with arisings. Notes were made of any

services, inclusions, pit stability, groundwater encountered and the characteristics of the strata encountered and are presented on the trial pit logs which are provided in Appendix 2 of this Report.

3.3. Soakaway Testing

The soakaway testing was carried out in selected trial pits at the locations shown in the exploratory hole location plan in Appendix 1. These pits were carefully excavated and filled with water to assess the infiltration characteristics of the proposed site. The pits were allowed to drain and the drop in water level was recorded over time as required by BRE Digest 365. The pits were logged prior to completing the soakaway test and were backfilled with arising's upon completion. The soakaway test results are provided in Appendix 3 of this Report.

3.4. Dynamic Probing (DPH)

The dynamic probe tests (DPH) were carried out at the locations shown in the location plan in Appendix 1 in accordance with B.S. 1377: Part 9 1990. The test consists of mechanically driving a cone with a 50kg weight in 100mm intervals and monitoring the number of blows required. An equivalent Standard Penetration Test (SPT) 'N' value may be calculated by dividing the total number of blows over a 300mm drive length by 1.5. The dynamic probe logs are provided in Appendix 4 of this Report.

3.5. Surveying (Pending)

The exploratory hole locations will be recorded using a KQ GEO Technologies KQ-M8 System which records the coordinates and elevation of the locations to ITM or Irish National Grid as required by the project specification. The coordinates and elevations are provided on the exploratory hole logs in the appendices of this Report.

4.0 Ground Conditions

4.1. General

The ground conditions encountered during the investigation are summarised below with reference to insitu test results. The full details of the strata encountered during the ground investigation are provided in the exploratory hole logs included in the appendices of this report.

The sequence of strata encountered were consistent across the site, with the exception of made ground was only encountered in some locations, and generally comprised;

- Topsoil/Surfacing
- Made Ground
- Cohesive Deposits

TOPSOIL: Topsoil was encountered in all the trial pits and was present to a maximum depth of 0.4m BGL.

MADE GROUND: Made Ground deposits were encountered beneath the Topsoil in trial pits TP01, TP02, TP11, TP18, TP20. The made ground deposits are not consistently present across the site and fall into two categories. The made ground in TP01 and TP02 is present to depths between 0.4m and 0.6m BGL. These deposits were described generally as *brown sandy slightly gravelly CLAY. Gravel is fine to coarse sub-angular to sub-rounded with fragments of plastic, glass, metal and timber.*

In Trial pits TP11, TP18 and TP20 The made ground is generally described as *brown mottled grey and orange slightly sandy slightly gravelly CLAY. Gravel is fine sub-angular to sub-rounded.* The made ground in these three trial pits is associated with the presence of possible land drains and yellow plastic pipes were observed in all three pits.

COHESIVE DEPOSITS: Cohesive deposits were encountered across the site and were described typically as *brown slightly sandy slightly gravelly CLAY with occasional cobbles and boulders* overlying a *stiff brown* to grey slightly sandy slightly gravelly CLAY with occasional cobbles and boulders. The secondary sand and gravel constituents varied across the site and with depth, with granular lenses occasionally present in the glacial till matrix. The strength of the cohesive deposits typically increased with depth and was firm to stiff or stiff below 1.2m BGL in the majority of the exploratory holes. These deposits had low, medium or high cobble and boulder content, where noted on the exploratory hole logs.

4.2. Insitu Strength Testing

The correlated DPH blow counts indicate that the overburden deposits are generally soft or soft to firm to a depth of 1.0m to 1.2m BGL and become firm or firm to stiff with depth. DPH26 encountered stiff ground a depth of 1.1m BGL which is at a shallower depth than in the other exploratory holes.

4.3. Groundwater

No groundwater was noted during the investigation however we would point out that these exploratory holes did not remain open for sufficiently long periods of time to establish the hydrogeological regime and groundwater levels would be expected to vary with the time of year, rainfall, nearby construction and other factors.

5.0 Recommendations & Conclusions

5.1. General

The recommendations given and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between exploratory hole locations, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for conditions which have not been revealed by the exploratory holes. Limited information has been provided at the ground investigation stage and any designs based on the recommendations or conclusions should be completed in accordance with the current design codes, taking into account the variation and the specific details contained within the exploratory hole logs.

5.2. Foundations

At the location of the proposed structure an allowable bearing capacity of 100 kN/m² is recommended for conventional strip or pad foundations on the stiff cohesive deposits at the depths outlined in the table below. The possibility for variation in the depth of the made ground in the vicinity of these foundations should be considered and foundation inspections should be carried out. Any soft spots encountered at the proposed foundation depths should be excavated and replaced with lean mix concrete.

		Allowal	ble Bearing Ca	apacities (ABC) kN/m²		
Trial Pit	ABC	Depth	Comment	Trial Pit	ABC	Depth	Comment
No.	kN/m²	m BGL		No.	kN/m²	m BGL	
SA01/DP01	100	1.20	Cohesive	TP12/DP18	100	1.40	Cohesive
SA02/DP02	100	1.70	Cohesive	TP13/DP19	100	1.20	Cohesive
SA03/DP03	100	1.50	Cohesive	TP14/DP20	100	1.50	Cohesive
SA04/DP04	100	1.30	Cohesive	TP15/DP21	100	2.10	Cohesive
SA05/DP05	100	1.40	Cohesive	TP16/DP22	100	1.30	Cohesive
SA06/DP06	100	1.80	Cohesive	TP17/DP23	100	1.30	Cohesive
TP01/DP07	100	1.60	Cohesive	TP18/DP24	100	1.80	Cohesive
TP02/DP08	100	1.80	Cohesive	TP19/DP25	100	1.50	Cohesive
TP03/DP09	100	1.40	Cohesive	TP20/DP26	100	1.20	Cohesive
TP04/DP10	100	1.60	Cohesive	DPH27	100	1.20	Cohesive
TP05/DP11	100	1.30	Cohesive	DPH28	100	1.20	Cohesive
TP06/DP12	100	1.30	Cohesive	DPH29	100	1.80	Cohesive
TP07/DP13	100	1.60	Cohesive	DPH30	100	1.20	Cohesive
TP08/DP14	100	1.50	Cohesive	DPH31	100	1.80	Cohesive
TP09/DP15	100	1.40	Cohesive	DPH32	100	1.60	Cohesive
TP10/DP16	100	2.50	Cohesive	DPH33	100	1.80	Cohesive
TP11/DP17	100	1.40	Cohesive				

A ground bearing floor slab is recommended to be based on the firm or firm to stiff cohesive deposits with an appropriate depth of compacted hardcore specified by the consulting engineer and in accordance with the limits and guidelines in SR21:2014+A1:2016 and/or NRA SRW CL808 Type E granular stone fill. Where the depth of Soft deposits exceeds 0.9m then suspended floor slabs should be considered.

5.3. Excavations

Short term temporary excavations in the cohesive deposits will remain stable for a limited time only and will require to be appropriately battered or the sides supported if the excavation is below 1.25m BGL or is required to permit man entry.

Excavations in soft Cohesive Deposits will require to be appropriately battered or the sides supported due to the low strength of these deposits.

5.4. Soakaway Design

Soakaway tests were carried out at six locations, at all of the locations of the water level dropped too slowly to allow calculation of 'f' the soil infiltration rate. These locations are therefore not recommended as suitable for soakaway design and construction.

The recommendations provided in this report should be verified in the design of the proposed buildings, using the full details of the loading conditions and taking into consideration the allowable tolerable settlements/movements that the building can accommodate. The founding strata should be inspected and verified by a suitably qualified engineer prior to construction of the building foundations.

APPENDIX 1 - Site Location Plan



724000E

672400N

724100E

724200E



724000E

724100E

724200E

APPENDIX 2 – Trial Pit Records



S		Gro	und In	vestig	jations Ire w.gii.ie	land	Ltd	Site Tinahask			Trial Pit Number SA01
Machine : Method :	8t Ex Trial	ccavator Pit	Dimens 2.00m	sions x 0.50m x 1	l.95m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins			Job Number 12960-06-23
			Locatio	on		Dates 11	/07/2023	Project Contractor			Sheet 1/1
Depth (m)		Sample / Test	Water Depth (m)	Fie	eld Records	Level (mOD)	Depth (m) (Thickness)	D	escription		Kater Kater
Plan							(0.30) (0.30) (1.00) (1.00) (0.30) (0.30) (0.35)	Brown TOPSOIL with root Soft brown mottled yellow CLAY. Gravels are fine sub subrounded boulder conter subrounded. Firm grey slightly sandy sl are fine subangular to sub fine. Complete at 1.95m	ets. slightly sandy slightly grave bangular to subrounded with int.	s ed	
								No groundwater encountere Trial pit stable. Trial pit backfilled upon com	d. pletion.		
· · ·							<mark>.</mark>	Scale (approx) 1:25	Logged By AM	Figure 12960-	• No. 06-23.SA01

S		Grou	ind In	vestigation www.gii.ie	s Ire	land	Ltd	Site Tinahask		Trial I Numb SAC	Pit ber 02
Machine : Method :	8t E Tria	Excavator al Pit	Dimens 2.10m x	ions < 0.50m x 1.90m (L x \	W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Numb 12960-0	oer 06-23
			Locatio	n		Dates 11	/07/2023	Project Contractor		Sheet 1/*	t 1
Depth (m)		Sample / Tests	Water Depth (m)	Field Record	s	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend	p Water
Plan							(0.30) (0.20) (0.20) (0.20) (0.90) (0.90) (0.90) (0.20) (0.20) (0.20) 1.90 (0.20)	Brown TOPSOIL with root Very soft brown slightly sa Gravels are fine subangul rounded boulder content. Soft brown slightly sandy sare fine subangular to sub boulder content. Soft grey slightly sandy sli fine subangular to subrout content. Firm to stiff grey slightly sa Gravels are fine subangul rounded boulder content. Complete at 1.90m	ets Indy slightly gravelly CLAY. ar to subrounded with low slightly gravelly CLAY. Graves rounded with low rounded indy slightly gravelly CLAY. Gravels ar to subrounded with low		
								No groundwater encountere Trial pit stable. Trial pit backfilled upon com	d. pletion.		
	•					•		Scale (approx) 1:25	Logged By AM	Figure No.	SA02

S		Grou	nd In	vestig www	ations Ire v.gii.ie	land	Ltd	Site Tinahask			Trial Pit Number SA03
Machine : Method :	8t Excava Trial Pit	itor	Dimens 2.10m x	ions x 0.50m x 1	.80m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins			Job Number 12960-06-23
			Locatio	n		Dates 11	/07/2023	Project Contractor			Sheet 1/1
Depth (m)	Sam	ple / Tests	Water Depth (m)	Fie	ld Records	Level (mOD)	Depth (m) (Thickness)	D	escription		Legend b
Plan . 	· · ·	· · · · · · · · · · · · · · · · · · ·		· ·	· · ·	·		Brown TOPSOIL with root Soft light brown to brown r slightly gravelly CLAY. Gra- subrounded. Firm light brown to brown gravelly CLAY. Gravels are Sand is yellow graded fine Complete at 1.80m Complete at 1.80m Remarks No groundwater encountere Trial pit stable. Trial pit backfilled upon com	ets.	/	
· · · · · ·	•	•	•		· ·		· · ·				
							s	Scale (approx) 1:25	Logged By AM	Figure 12960-	• No. 06-23.SA03

S		Grou	ind In	vestię ww	gations Ire w.gii.ie	eland	Ltd	Site Tinahask			Trial Pit Number SA04
Machine : Method :	8t Exc Trial F	cavator Pit	Dimens 2.00m	s ions x 0.50m x1	.90m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins			Job Number 12960-06-23
			Locatio	'n		Dates 11	1/07/2023	Project Contractor			Sheet 1/1
Depth (m)	s	ample / Tests	Water Depth (m)	Fi	eld Records	Level (mOD)	Depth (m) (Thickness)	D	escription	1	Legend Safe
							 (0.35)	Brown TOPSOIL with rook	ets and tree roots.		
							0.35 (0.25)	Very soft brown slightly sa Gravels are fine subangul	ndy slightly gravelly CLAY. ar to subrounded.	•	
							- 0.60 	Soft brown slightly sandy are fine subangular to sub	slightly gravelly CLAY. Grave rounded.	els :	
							- 1.45 - (0.45) - 1.90	Firm grey mottled brown s CLAY. Gravels are fine sul angular to subangular cob	lightly sandy slightly gravelly oangular to subrounded with ble content.	y 1 low	
Plan								Complete at 1.90m			
Pian .			·	•		•	•••	No groundwater encountere Trial pit stable.	d.		
								Trial pit backfilled upon com	pletion.		
				·			•••				
 		· ·		•	· ·		· ·				
							<mark> </mark>	Scale (approx)	Logged By	Figure	No.
								1:25	АМ	12960-0	06-23.SA04

	Grou	ind In	vestigations lre www.gii.ie	land	Ltd	Site Tinahask		Trial Pit Number SA05
Machine : 8 Method : 7	t Excavator rial Pit	Dimens 2.10m	ions x 0.50m x 2.00m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-2
		Locatio	n	Dates 11	1/07/2023	Project Contractor GII		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend
Plan . 	 		· · · ·	· · · · · · · · · · · · · · · · · · ·	(Thičkňess) (0.30) (0.20) (0.20) (0.20) (0.80) (0.80) (0.70) (Brown TOPSOIL with root Very soft brown mottled ye gravelly CLAY. Gravels are Soft brown mottled yellow CLAY. Gravels are fine sul subrounded cobbles and b Complete at 2.00m Complete at 2.00m Remarks No groundwater encountere Trial pit stable. Trial pit backfilled upon com	lightly sandy slightly gravelly bangular to subrounded.	Legend 3
					s	Scale (approx) 1:25	Logged By AM	Figure No.

		Grou	ind In	vestig www	ations Ire /.gii.ie	land	Ltd	Site Tinahask			Trial Pit Number SA06
Machine : 8 Method :	8t Exca Trial Pi	avator t	Dimens 2.20m	s ions x 0.50m x 2.	00m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		1	Job Number 12960-06-23
			Locatio	n		Dates 11	/07/2023	Project Contractor			Sheet
Depth (m)	Sa	mple / Tests	Water Depth (m)	Fiel	ld Records	Level (mOD)	Depth (m) (Thickness)	D	escription	l	Aate bnege-
Plan							(0.20) (0.20) (1.60) (1.60) (0.20) 2.00	Greyish brown TOPSOIL v soft grey mottled brown sli CLAY. Gravels are fine sul firm grey mottled brown sl CLAY. Gravels are fine sul Complete at 2.00m	vith rootlets.		
								No groundwater encountere Trial pit stable. Trial pit backfilled upon com	d. pletion.		
								Scale (approx) 1:25	Logged By AM	Figure 12960-0	No. 06-23.SA06

S	Grou	Ind Inv	/estigations Ire www.gii.ie	land	Ltd	Site Tinahask		Trial Pit Number TP01
Machine : 81 Method : Tr	t Excavator rial Pit	Dimension 2.80m x	ons 0.70m x 3.90m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Location		Dates 11	/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness	D	escription	Legend Safe
					(0.10) - 0.10 - (0.30)	Brown TOPSOIL with root MADE GROUND: Brown s CLAY. Gravels are fine to with plastic fragments and	lets and tree roots. slightly sandy slightly gravell coarse subangular to subrou aluminium cans.	y unded
					- 0.40 	Soft grey mottled brown sl CLAY. Gravels are fine to with low subrounded to ro content.	ightly sandy slightly gravelly coarse subangular to subrou unded cobble and boulder	unded
					(1.00) 			
1.20-1.20	B1				- - - - - - - - - - - - - - - - - - -	Firm grey slightly sandy sl fine to coarse subangular	ightly gravelly CLAY. Gravels to subrounded with low	s are
1.80-1.80	B2				(0.50)			
					 (0.70)	Firm to stiff grey slightly sa Gravels are fine to coarse low subrounded to rounde	andy slightly gravelly CLAY. subangular to subrounded v d cobble content.	with ************************************
2.50-2.50	В3				2.60	Stiff Grey mottled brown s CLAY. Gravels are fine to with low subrounded to ro	lightly sandy slightly gravelly coarse angular to subrounde unded cobble and boulder	/
2.90-2.90	B4				(0.50) 	Very stiff Grey mottled bro	wn slightly sandy slightly gra	avelly
					 (0.80)	CLÁY. Gravels are fine to with low subrounded to ro content.	coarse angular to subrounde unded cobble and boulder	ed
3 90-3 90	B5							
Plan					<u> </u>	Complete at 3.90m Remarks		
	· ·	•			· ·	No groundwater encountere Trial pit stable. Trial pit backfilled upon com	d. pletion.	
				-				
					· ·			
		·		-	•••	Scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP01

	Grou	nd Inv	vestigations Ir	eland	Ltd	Site Tinahask		Trial Pit Number TP02	, ,
Machine : 8 Method : T	t Excavator rial Pit	Dimension 2.60m x	ons 0.70m x 3.90m (L x W x D)	Ground	d Level (mOD)	Client Hayes Higgins		Job Number 12960-06-	r 23
		Location		Dates 1	1/07/2023	Project Contractor		Sheet 1/1	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend	Water
0.40-0.40	В1				(0,10) (0,10) (0,50) (0,50) (0,50) (0,20) (0,20) (0,80)	Brown TOPSOIL with root MADE GROUND: Brown s CLAY. Gravel is fine to coo with fragments of plastic, s Soft to stiff brown mottled slightly gravelly CLAY. Gra subangular to subrounded content.	lets. slightly sandy slightly gravel arse subangular to subround glass, metal and timber. grey and orange slightly san wels are fine to coarse I with low subrounded cobbl	ndy	
1.00-1.00	B2				- (1.00)	Soft grey mottled brown a gravelly CLAY. Gravels ar subrounded with low subr	nd orange slightly sandy slig e fine to coarse subangular ounded cobble content.	htly to	
2.00-2.00	В3					Firm grey mottled brown s CLAY. Gravels are fine to	lightly sandy slightly gravell coarse subangular to subro	y unded.	
3.00-3.00	В4				2.60	Firm to stiff grey mottled b gravelly CLAY. Gravels are subrounded.	rown slightly sandy slightly e fine to coarse subangular	to	
					- 3.30 - (0.60) - 3.90	Very stiff grey mottled brow CLAY. Gravels are fine to Complete at 3.90m	wn slightly sandy slightly gra coarse subangular to subro	* *	
Plan				•		Remarks			
						Trial pit stable. Trial pit backfilled upon com	pletion.		
· ·	· ·	•	· · ·		· · ·				
					s	Scale (approx) 1:25	Logged By AM	Figure No.	02

Ground Investigations Ire					Ltd	Site Tinahask	Trial Pit Number TP03	
Machine:8 Method:7	t Excavator rial Pit	Dimensio 2.40m x 0	ns).70m x 4.00m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Location		Dates 11	/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend Safe
					(0.20) 0.20 (0.50)	Brown TOPSOIL with root Very soft light brown to gre CLAY with yellow to orang coarse subangular to subr	ets. ey slightly sandy slightly grav e fine sand. Gravels are fine ounded.	elly to
0.70	B1				0.70	Soft light brown to grey sli with yellow to orange fine subangular to subrounded	ghtly sandy slightly gravelly (sand. Gravels are fine to coa	DLAY
1.20	B2				(0.70)	Stiff grey mottled brown sl	ightly sandy slightly gravelly	
					 (1.00)	CLAY. Gravel is fine subar subrounded boulder conte	iğulár to súbrounded with lóv nt.	N
2.20	В3				 2.40	Very stiff grey mottled brov CLAY. Gravel is fine subar subrounded boulder conte	wn slightly sandy slightly gra ngular to subrounded with low nt.	velly v
					- - - - - - - - - - - - - - - - - - -			
3.60	В4							
Plan					<u> </u>	Remarks	d	<u> </u>
						Trial pit stable. Trial pit backfilled upon com	pletion.	
		·			•••			
	· ·	•			· · · -			
					S	Scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP03

	Gr	ound	Inve	stigatic www.gii.	ons Ire ^{ie}	land	Ltd	Site Tinahask				Trial Pit Number TP04	
Machine : 8 Method : 7	8t Exacavator Frial Pit	Dim 2.7	iensions 'Om x 0.7	; 'Om x 3.90m (I	L x W x D)	Ground	Level (mO	D)	Client Hayes Higgins			Job Number 12960-06-23	
		Loc	ation			Dates 11	/07/2023		Project Contractor GII			Sheet 1/1	
Depth (m)	Sample / Te	sts Wa (n	iter pth 1)	Field Rec	ords	Level (mOD)	Depth (m) (Thicknes	ss)	D	escription		Legend X	
							(0.3	0)	Brown TOPSOIL with root	n rootlets and tree roots.			
							0.3	30	Very soft light brown mottle slightly sandy slightly grav coarse subangular to subr	ed orange to yellow and grey elly CLAY. Gravels are fine t ounded.	y o	· · · · · · · · · · · · · · · · · · ·	
							(0.6	0)				······································	
							- 0.9 -	90	Soft grey mottled brown sl CLAY. Gravels are fine to	vn slightly sandy slightly gravelly e to coarse subangular to subrounded.		· · · · · · · · · · · · · · · · · · ·	
							- (0.7	0)				· · · · · · · · · · · · · · · · · · ·	
							 1.6	50 -	Firm arey mottled brown s	n slightly sandy slightly gravelly		· · · · · · · · · · · · · · · · · · ·	
									CLAY. Gravels are fine to	n slightly sandy slightly gravelly (* cocoarse subangular to subrounded.		• <u>- • • • • •</u> • • • • • • • • • • • • • •	
							(0.8	0)				······································	
							 2.4	10	Firm to stiff grey mottled b	rown slightly sandy slightly		· · · · · · · · · · · · · · · · · · ·	
							- (0.7	0)	subrounded.			· · · · · · · · · · · · · · · · · · ·	
												· · · · · · · · · · · · · · · · · · ·	
							- 3.1 	0	Firm to stiff grey slightly sa Gravels are fine to coarse	andy slightly gravelly CLAY. subangular to subrounded.		· · · · · · · · · · · · · · · · · · ·	
							3.5	50	Very stiff grey slightly sand are fine to coarse subangu	ly slightly gravelly CLAY. Gra Jar to subrounded.	avels	•	
							(0.4	0)				······································	
Plan								R	Complete at 3.90m				
								!	No groundwater encountere Trial pit stable. Trial pit backfilled upon com	d. pletion.			
						. .							
										Longod Dir	Ci	Ne	
								5	1:25	соддеа ву АМ	12960-	06-23.TP04	

	Gro	ound In	vestigations www.gii.ie	Ireland	Ltd	Site Tinahask			
Machine : 8 Method : ⁻	8t Excavator Frial Pit	Dimens 2.50m	ions x 0.70m x 3.90m (L x W x	D) Ground	l Level (mOD) Client Hayes Higgins		Job Number 12960-06-23	
		Locatio	n	Dates 12	2/07/2023	Project Contractor		Sheet 1/1	
Depth (m)	Sample / Tes	ts Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness) D	escription	Legend X	
					(0.30)	Brown TOPSOIL with root	ets.		
					 	Soft brown mottled grey as gravelly CLAY with coarse Gravels are fine subangul	nd orange sligtly sandy sligt sandy gravelly cobbly lens ar to subrounded.	e.	
					(0.90) 				
					- 1.20 	Firm grey mottled brown s CLAY. Gravels are fine to with low rounded cobble c	d brown slightly sandy slightly gravelly re fine to coarse subangular to rounded I cobble content.		
					(1.00) 				
					2.20	Firm to stiff light bluish gre slightly gravelly CLAY. Gra subangular to subrounded	y mottled brown slightly san avels are fine to coarse	<u></u>	
					- (0.90) - - - - - -				
					3.10 (0.40)	Stiff light bluish grey mottle gravelly CLAY. Gravels ar subrounded.	ed brown slightly sandy slig e fine to coarse subangula	htly ⁻ to	
					(0.40)	Very stiff light bluish grey n slightly gravelly CLAY. Gra subangular to subrounded	nottled brown slightly sand avels are fine to coarse	y + + + + + + + + + + + + + + + + + + +	
					- 3.90	Complete at 3.90m			
Plan .						Remarks No groundwater encountere Trial pit stable	d.		
		•		·	•••	Irial pit backfilled upon com	pletion.		
		•		·	•••				
					· · ·				
							Logged By	Figure No.	
						1:25	AM	12960-06-23.TP05	

	Gro	und In	vestigations Ire www.gii.ie	land	Ltd	Site Tinahask		
Machine:8 Method:T	t Excavator rial Pit	Dimensi 2.70m x	ions c 0.70m x 3.70m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Locatio	n	Dates 12	2/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend Safe
					(0.30) 0.30	Brown TOPSOIL with root	ets. ey and orange slightly sand	y ::
					(0.20) 0.50	slightly gravelly CLAY. Gra subangular to subrounded Soft brown mottled grey at gravelly CLAY. Gravels are	veis are fine to coarse nd orange slightly sandy slig e fine to coarse subangular t	htly
					(0.40) 0.90	subrounded.		
					(0.40)	CLAY. Gravels are fine to coarse subangular to subrounded		inded.
					- 1.30 	Firm to stiff grey mottled b gravelly CLAY. Gravels are subrounded.	nottled brown slightly sandy slightly avels are fine to coarse subangular to	
					(1.70)			
					3.00	Very stiff grey mottled brow CLAY. Gravels are fine to	wn slightly sandy slightly gra coarse subangular to subrou	velly
					(0.70) 			
					- - - -	Complete at 3.70m		
Plan	· · ·					Remarks No groundwater encountere	d.	
						Trial pit backfilled upon com	pletion.	
· ·	· ·	•			· · ·			
						Scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP06

	Grou	nd Invo	estigations Ire www.gii.ie	Ltd	Site Tinahask	Trial Pit Number TP07		
Machine : 81 Method : Tr	t Excavator rial Pit	Dimension 2.70m x 0	is .70m x 3.60m (L x Wx D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Location		Dates 12	2/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Kater Vater
					(0.30)	Brown TOPSOIL with root	ets.	
0.50	B1				(0.40)	Very soft brown mottled gr slightly gravelly CLAY. Gra subangular to subrounded	ey to orange slightly sandy vels are fine to coarse	
					0.70	Soft brown mottled grey to gravelly CLAY. Gravels are subrounded.	orange slightly sandy slight fine to coarse subangular f	ily <u>,</u> , to
1.00	B2				- (0.80) 			
					1.50 (0.30)	Firm grey mottled brown s CLAY. Gravels are fine to o	lightly sandy slightly gravelly coarse subangular to subrou	, <u>, , , , , , , , , , , , , , , , , , </u>
2.00	В3				- 1.80 	Stiff grey mottled brown sl CLAY. Gravels are fine to o	ghtly sandy slightly gravelly coarse subangular to subrou	unded.
					(1.50)			
3.00	B4				- - - - - - - - - - - - - - - - - - -	Very stiff grey mottled brow CLAY. Gravels are fine to a	vn slightly sandy slightly gra coarse subangular to subrou	velly
3.60	B5				- 3.60 	Complete at 3.60m		* :
Plan	· ·	•		-	· · · · · ·	⊥ Remarks No groundwater encountere	d.	
						Triaľ pit stable. Trial pit backfilled upon com	pletion.	
				•				
· ·	· ·	•		-	· · ·			
						Scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP07

	Ground Investigations Ir					land	Ltd	Site Tinahask		Trial Pit Number TP08
Machine : Method :	8t Excava Trial Pit	ator	Dimensio 2.60m x	ons 0.70m x 4.10m	(L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
			Location			Dates 12	2/07/2023	Project Contractor GII		Sheet 1/2
Depth (m)	Sam	ple / Tests	Water Depth (m)	Field Re	ecords	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend Sate
							 (0.30)	Brown TOPSOIL with root	lets.	
							0.30 (0.40)	Very soft brown mottled gr slightly gravelly CLAY. Gra subrounded.	ey and orange slightly sand wels are fine subangular to	ly
							0.70	Soft brown mottled grey as gravelly CLAY. Gravels are	nd orange slightly sandy slig e fine subangular to subrou	ghtly
							(0.80)			
							- - - - 1.50			
							- (0.30) - 1.80	Firm brown mottled grey a gravelly CLAY. Gravels are	nd orange slightly sandy sli e fine subangular to subrou	ghtly nded.
							- (0.60)	Stiff brown mottled grey ar gravelly CLAY. Gravels are	nd orange slightly sandy slig e fine subangular to subroui	nded.
							2.40	0.12		
								Stiff grey mottled brown sl CLAY. Gravel is fine to coa	ightly sandy slightly gravelly arse subangular to subround	/ ded.
							(0.90)			
							3.30	Very stiff grey mottled brow	wn slightly sandy slightly gra	avelly
								CLÁY. Gravel is fine to coa	arse subángular to subround	ded.
							(0.80) 			
Plan .	•			· ·	•	-		⊥ Remarks No groundwater encountere	d.	F
								Triaľ pit stable. Trial pit backfilled upon com	pletion.	
· ·		•	•	· ·	•		· · ·			
							-	Ander (august)	1	F 1
							S	cale (approx) 1:25	Loggea By AM	Figure No. 12960-06-23.TP08

	Grou	und Inv	estigations Ire www.gii.ie	land	Ltd	Site Tinahask		Trial Pit Numbe TP08	t "r 3
Machine : 8 Method : T	t Excavator rial Pit	Dimensio 2.60m x (D.70m x 4.10m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Numbe 12960-06-	• r -23
		Location		Dates 12	2/07/2023	Project Contractor		Sheet 2/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend	Water
					4.10	Complete at 4.10m		· · · · · · · · · · · · · · · · · · ·	
					- - - -				
					- - - -				
					-				
					- - - -				
					-				
Dian					<u> </u>				
Fidii .		·		· ·	· · ^r	No groundwater encountere Trial pit stable.	d.		
						I rial pit backfilled upon com	pletion.		
· ·					· ·				
· ·					· ·				
		·			•••				
		·			s	scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP	20°

S	Grou	nd Inv	estigations Ire www.gii.ie	land	Ltd	Site Tinahask	Trial Pit Number TP09	
Machine:8 Method:7	t Excavator rial Pit	Dimension 2.40m x 0	ns 1.70m x 4.00m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Location		Dates 14	1/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend Safe
					(0.20) 0.20 (0.30) 0.50	Brown TOPSOIL with root Very soft brown mottled gr slightly gravelly CLAY. Gra subrounded.	ets. ey and orange slightly sand vel is fine subangular to	y
0.50	B1				(0.40)	Soft to stiff brown mottled slightly gravelly CLAY. Gra subrounded.	grey and orange slightly sar vel is fine subangular to	idy
1.00	B2				(0.50)	Soft grey mottled brown sl CLAY. Gravels are fine sul	ightly sandy slightly gravelly bangular to subrounded.	
2 00	B3				- 1.40 - 1.40 - 1.40 - 1.40 - 1.00)	Firm to stiff grey mottled b gravelly CLAY. Gravels are	rown slightly sandy slightly e fine subangular to subrour	aded.
					2.40 (0.40)	Stiff grey mottled brown sl CLAY. Gravels are fine sul	ightly sandy slightly gravelly pangular to subrounded.	
3.00	В4				2.80	Very stiff grey mottled brow CLAY. Gravels are fine sul	wn slightly sandy slightly gra oangular to subrounded.	velly
3.90	В5							
Plan .	· ·	•			· ·	Remarks	d	
				-		Trial pit stable. Trial pit backfilled upon com	pletion.	
		·		-				
		·						
	-		-		5	Scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP09

S	Grou	nd In	vestigation www.gii.ie	s Irela	and I	Ltd	Site Tinahask		Trial Pit Number TP10
Machine : 8 Method : T	t Excavator rial Pit	Dimens 2.20m :	ions x 0.70m x 3.7m (LxW	xD)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Locatio	n	1	Dates 14	/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Record	ds	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend
0.50	В1					(0.30) 0.30 0.30 (0.40)	Brown TOPSOIL with root Very Soft brown slightly so Gravels are fine subangul	ets. andy slightly gravelly CLAY. ar to subrounded.	
1.00	B0					- 0.70 - (0.20) - 0.90 - (0.20)	Very soft brown mottled gr CLAY. Gravels are fine to Soft brown mottled grey sl CLAY. Gravels are fine to	ey slightly sandy slightly gra coarse subangular to subrou ightly sandy slightly gravelly coarse subangular to subrou	inded.
1.00	DZ					- 1.10 - (0.60) 	Soft to firm grey mottled bi gravelly CLAY. Gravels are	rown slightly sandy slightly e fine subangular to subroun	ded.
2.00	В3					- 1.70 - (0.40) - 2.10 - (0.40)	Soft grey mottled brown sl CLAY. Gravels are fine sul Firm grey mottled brown s CLAY. Gravels are fine sul	ightly sandy slightly gravelly bangular to subrounded. lightly sandy slightly gravelly bangular to subrounded.	
3.00	В4					2.50 2.50 (0.70)	Firm to stiff grey mottled b gravelly CLAY. Gravels are	prown slightly sandy slightly e fine subangular to subroun	ded.
3.50	B5					- 3.20 - (0.50) - 3.70	Firm grey mottled brown s CLAY. Gravels are fine sul	lightly sandy slightly gravelly bangular to subrounded.	
						- - - -			
Plan .							Remarks No groundwater encountere Trial pit stable.	d.	
	· ·	•		· ·		•	тнагріс баскішей цроп сот	ມເປັນ.	
		•				-	Scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP10

	Ground Investigations Irelai				Ltd	Site Tinahask		Trial Pit Number TP11
Machine:8 Method:T	it Excavator Trial Pit	Dimension 2.30m x	ons 0.70m x 3.70m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Location	1	Dates	4/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend Safe
					(Brown TOPSOIL with root MADE GROUND: brown r sandy slightly gravelly Cla subrounded to rounded gr pipe (possible land drain). subrounded. Soft brown mottled grey and gravelly CLAY. Gravel is fi Soft grey mottled brown sl CLAY. Gravels are fine sul	ets. nottled grey and orange slig y with orange to yellow coar avel surrounding yellow pla Gravels are fine subangula nd orange slightly sandy slig ne subangular to subrounded ightly sandy slightly gravelly bangular to subrounded.	htly se stic r to i
					2.70 (0.60)	Stiff grey mottled brown sl CLAY. Gravels are fine sul	ightly sandy slightly gravelly bangular to subrounded. wn slightly sandy slightly gra	1 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -
					(0.40) 3.70	CLAY. Gravels are fine sul	bangular to subrounded.	
Plan .					!	Remarks	d.	
						Trial pit stable. Trial pit backfilled upon com	pletion.	
· ·					· · ·	Scale (approx)	Logged By	Figure No.
						1:25	AM	12960-06-23.TP11

S	Grou	nd Inv	vestigations Ire www.gii.ie	land	Ltd	Site Tinahask		Trial Pit Number TP12
Machine : 8t	t Excavator rial Pit	Dimensi 2.20m x	ons 0.70m x 3.85m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Locatior	1	Dates 14	/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Kater Vater
					(0.20) 0.20 (0.40)	Brown TOPSOIL with root	ets and tree roots. orange slightly sandy sligh fine subangular to subrour	tly ided.
0.50	B1 B2				0.60 (0.60)	Soft brown mottled grey sl CLAY. Gravels are fine su	ightly sandy slightly gravelly bangular to subrounded.	
1.00					1.20 (0.20) 1.40	Soft grey mottled brown sl CLAY. Gravels are fine to Firm to stiff grey mottled b	ightly sandy slightly gravelly coarse subangular to subrou	unded.
2.10	ВЗ					gravelly CLAY. Gravels are subrounded.	fine to coarse subangular	
3.00	B4				2.70 (0.50)	Stiff grey mottled brown sl CLAY. Gravels are fine to o	ghtly sandy slightly gravelly coarse subangular to subrou	unded.
					3.20 (0.65) 3.85	Very stiff grey mottled brow CLAY. Gravels are fine to o Complete at 3.85m	vn slightly sandy slightly gra coarse subangular to subro	velly inded.
Plan .	· ·			•	F	Remarks		
						Trial pit backfilled upon com No groundwater encountere	pletion. d.	
 	· ·		 	· ·	· ·			
				. .	s	scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP12

S	Gro	und Inv	/estigations lre www.gii.ie	Site Trial Num Tinahask TP			Trial Pit Number TP13		
Machine:8 Method :⊺	t Excavator rial Pit	Dimensio 2.20m x	ons 0.70m x 3.90m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		12	Job Number 2960-06-23
		Location		Dates 14	4/07/2023	Project Contractor Gll		:	Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	L	Aater Kater
(ṁ)	Sample / Tests	. Depth (m)	Field Records	(mOD)	(Thickness) (0.20) 0.20 0.20 0.20 0.20 0.40 0.6	Brown TOPSOIL with root Very soft brown mottled or gravelly CLAY. Gravels are Soft brown mottled orange CLAY. Gravels are fine sul Soft brown mottled grey sl CLAY. Gravels are fine to Firm mottled grey slightly s Gravels are fine to coarse Firm grey mottled brown s CLAY. Gravels are fine to coarse Firm grey mottled brown s CLAY. Gravels are fine to coarse Frim to stiff grey mottled brown sl CLAY. Gravels are fine to coarse Stiff grey mottled brown sl CLAY. Gravels are fine to coarse Very stiff grey mottled brown sl CLAY. Gravels are fine to coarse Very stiff grey mottled brown sl CLAY. Gravels are fine to coarse Very stiff grey mottled brown sl CLAY. Gravels are fine to coarse Complete at 3.90m Remarks	escription ets and tree roots. ange slightly sandy slightly e fine subangular to subrounded. slightly sandy slightly gravelly coarse subangular to subrounded. sandy slightly gravelly CLAY. subangular to subrounded. lightly sandy slightly gravelly coarse subangular to subrounded. rown slightly sandy slightly gravelly coarse subangular to subrou rown slightly sandy slightly gravelly coarse subangular to subrou wn slightly sandy slightly gravelly coarse subangular to subrou	Inded.	
						Trial pit stable. Trial pit backfilled upon com	a. pletion.		
				•					
· ·	· ·		· · ·		· · ·				
				•		Scale (approx) 1:25	Logged By AM	Figure N 12960-06	No. 6-23.TP13

	Grou	nd In	vestigations Ire www.gii.ie	Site Tinahask				
Machine : 8 Method : T	Machine : 8t Excavator Method : Trial Pit		ons : 0.70m x 4.00m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Locatio	1	Dates 14	4/07/2023	Project Contractor	roject Contractor	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend Safe
					(0.20) 0.20 (0.40)	Brown TOPSOIL with root Very soft pinkish brown m sandy slightly gravelly CL/ subangular to subrounded	ets and tree roots. lottled orange and grey sligh AY. Gravels are fine to coars	tty e
0.50	B1				0.60	Soft brown mottled grey sl CLAY. Gravels are fine to	ightly sandy slightly gravelly coarse subangular to subrou	unded.
1.00	B2				(0.70)			
					(0.30)	Soft grey mottled brown sl CLAY. Gravels are fine to Firm to stiff grey mottled b	ightly sandy slightly gravelly coarse subangular to subrou rown slightly sandy slightly	unded.
2.00	B3				(0.40)	Stiff grey mottled brown sl	ightly sandy slightly gravelly	
					- (1 30)	CLAY. Gravels are fine to	čoarse subangular to subrou	Inded.
3.50	В4				- 3.30 - (0.70)	Very stiff grey mottled brow CLAY. Gravels are fine to	wn slightly sandy slightly gra coarse subangular to subrou	velly inded.
Plan					4.00			······································
	· ·		· · ·		· · · '	No groundwater encountere Trial pit stable. Trial pit backfilled upon com	d. pletion.	
· · · · · ·	· ·				· ·			
					s	Scale (approx)	Logged By	Figure No.
1						1:25	AM	12960-06-23.1P14

	Gro	und In	vestigations Ire www.gii.ie	Site Tinahask	Trial Pit Number TP15			
Machine : 8 Method : 7	Machine : 8t ExcavatorDimMethod : Trial Pit2.6		ions x 0.70m x 3.80m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Locatio	n	Dates 12	2/07/2023	Project Contractor Gll		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend Safe
					 (0.40)	Brown TOPSOIL with root subrounded cobbles.	ets and medium subangular	r to
					- 0.40 - (0.30)	Very soft brown mottled gr CLAY. Gravels are fine to	ey slightly sandy slightly gra coarse subangular to subrou	avelly unded.
					(0.40)	Soft brown mottled grey sl CLAY. Gravels are fine to	ightly sandy slightly gravelly coarse subangular to subrou	unded.
					- 1.10 - (0.20)	Soft grey mottled brown sl CLAY. Gravels are fine to	ightly sandy slightly gravelly coarse subangular to subrou	unded.
						Firm to stiff grey mottled b gravelly CLAY. Gravels are subrounded.	rown slightly sandy slightly e fine to coarse subangular t	to
					(1.70)			
					3.00 (0.60)	Stiff grey mottled brown sl CLAY. Gravels are fine to	ightly sandy slightly gravelly coarse subangular to subrou	Inded.
					- 3.60 - (0.20) - 3.80	Very Stiff grey mottled bro CLAY. Gravels are fine to Complete at 3.80m	wn slightly sandy slightly gra coarse subangular to subrou	avelly
Plan .		•			'	Remarks	d.	
				•		Triaľ pit stable. Trial pit backfilled upon com	pletion.	
		•		•	•••			
· ·	· ·		· · ·		 			
						Scale (approx)	Logged By	Figure No.
						1:25	AM	12900-06-23.1P15

S	Grou	nd Inv	/estigations Ire www.gii.ie	Site Tinahask	Trial Pit Number TP16			
Machine : 8t	t Excavator rial Pit	Dimensio 2.90m x	ons 0.70m x 3.80m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins	Client Hayes Higgins	
		Location		Dates 12	2/07/2023	Project Contractor Gll		Sheet 1/1
Depth (m)	Sample / Tests	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	Description	
0.50	B 1				(0.20) 0.20 0.20) 0.40 (0.30) 0.70 (0.60)	Brown TOPSOIL with root Very soft brown slightly sa Gravels are fine to coarse Very soft brown mottled gr CLAY. Gravels are fine to with low subrounded cobb Soft brown mottled grey sl CLAY. Gravels are fine to with low subrounded cobb	ets. ndy slightly gravelly CLAY. subangular to subrounded. ey slightly sandy slightly gra coarse subangular to subrou le content. ightly sandy slightly gravelly coarse subangular to subrou le content.	Image: state
	D2				- 1.30 - 1.30 - (0.60) - 1.90 	Firm brown mottled grey s CLAY. Gravels are fine to with low subrounded cobb	lightly sandy slightly gravelly coarse subangular to subrou le content. grey slightly sandy slightly e fine to coarse subangular to bunded cobble content.	to
2.50	Β3				(0.60) 3.60 (0.20)	Stiff brown mottled grey sl CLAY. Gravels are fine to with low subrounded cobb	ightly sandy slightly gravelly coarse subangular to subrou le content. wn slightly sandy slightly gra pangular to subrounded with	unded
3.80	B4				3.80	subrounded cobble conter Complete at 3.80m	nt.	
Plan	•••			•	F	Remarks	d	
						Trial pit stable. Trial pit backfilled upon com	pletion.	
· ·	· ·		· · · ·	· ·	· ·			
				•	s	Scale (approx) 1:25	Logged By AM	Figure No. 12960-06-23.TP16

	Ground Investigations Ireland Ltd								Site Tri Tinahask T		
Machine : 8 Method : 7	Machine : 8t ExcavatorDimensiMethod : Trial Pit2.40m >		imensions 2.40m x 0.70m x 3.60m (L x W x D)		Ground	Level (mOD)	Client Hayes Higgins		1:	Job Number 2960-06-23	
		-	Location			Dates 12	2/07/2023	Project Contractor		:	Sheet 1/1
Depth (m)	Sample / T	ests	Water Depth (m)	Fiel	d Records	Level (mOD)	Depth (m) (Thickness)	D	escription	L	Nater Nege.
							(0.30) 0.30 (0.60)	Brown TOPSOIL with root	ets. ey slightly sandy slightly gra bangular to subrounded.	avelly	
							(0.20)	Soft brown mottled grey sl CLAY. Gravels are fine sul	ightly sandy slightly gravelly pangular to subrounded.	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
							(0.20)	Soft grey mottled brown sl CLAY. Gravels are fine to	ightly sandy slightly gravelly coarse subangular to subrou	unded.	· · · · · · · · · · · · · · · · · · ·
							- 1.30 - (1.70) - (1.70) - (0.60) - (0.60) - (0.60)	Firm to stiff grey mottled b gravelly CLAY. Gravels are subrounded. Stiff grey mottled brown sl CLAY. Gravels are fine to o Complete at 3.60m	rown slightly sandy slightly a fine to coarse subangular ightly sandy slightly gravelly coarse subangular to subrot	to	
Plan .				•		•		Remarks	d.		
								Trial pit stable. Trial pit backfilled upon com	pletion.		
	·	•	·			•					
						•					
· ·		•	•			-	· ·	Scale (approx)	Logged By	Figure N	No.
								1:25	AM	12960-0	6-23.TP17

SI	Ground Investigations Ireland Ltd								Site Tinahask 7			
Machine : 8t Exca Method : Trial Pi	avator it	Dimensi 2.40m x	Ground Level (mOD)			Client Hayes Higgins	ns		Job Number 12960-06-23			
		Location	Dates 12/07/2023- 14/07/2023			Project Contractor GII	tractor		Sheet 1/2			
Depth (m) Sa	ample / Tests	Water Depth (m)	Field I	Records	Level (mOD)	Dep (m (Thicki	oth I) ness)	Description			Kater Sater	
Plan .		(m)				(Thicks	<pre>ness) 0.30) 0.30 0.30 0.30 0.30 0.30 0.60 0.20) 0.80 0.70) 1.50 1.00) 2.50 0.30) 2.80 1.30) 1.30) </pre>	Brown TOPSOIL with rooth MADE GROUND: brown ri sandy slightly gravelly Clas subrounded to rounded gr pipe (possible land drain), subangular to subrounded Soft brown mottled grey ar gravelly CLAY. Gravels are subrounded. Soft grey mottled brown sl CLAY. Gravels are fine to o Firm grey mottled brown sl CLAY. Gravels are fine to o Very stiff grey mottled brown sl CLAY. Gravels are fine to o Very stiff grey mottled brown sl CLAY. Gravels are fine to o Remarks No groundwater encountere Trial pit stable. Trial pit backfilled upon com	ets.	htly se stic yhtly unded.		
		•		•								
				·			S	Scale (approx) 1:25	Logged By AM	Figure 12960-	No. 06-23.TP18	
	G	roui	nd Inv	vestiga www.	ations Ire gii.ie	land	Ltd	Site Tinahask			Trial Pit Number TP18	r
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Machine : 8 Method :	3t Excavator Trial Pit		Dimensi 2.40m x	i ons (0.70m x 4.1	0m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		1	Job Number 12960-06-	r 23
			Locatior	n		Dates 12 14	2/07/2023- 4/07/2023	Project Contractor			Sheet 2/2	
Depth (m)	Sample / 1	Tests	Water Depth (m)	Field	Records	Level (mOD)	Depth (m) (Thickness)	D	escription	l	_egend	Water
							4.10	Complete at 4.10m		••	· <u>* *</u> · · ·	
Pian .		•			•		'	Remarks No groundwater encountere Trial pit stable.	d.			
		•	•				•••	i riai pit backfilled upon com	pietion.			
· ·	•	•	•		•							
					•							
					•		-	Ander (august)				
							S	асане (арргох) 1:25	Loggea By AM	⊢igure 12960-0	но.)6-23.TP	18

S	Grou	nd Inv	vestigations Ire www.gii.ie	land	Ltd	Site Tinahask		Trial Pit Number TP19	r)
Machine : 8 Method : T	it Excavator Trial Pit	Dimensio 2.40m x	ons 0.70m x 4.05m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-	r ∙23
		Location	I	Dates 12	2/07/2023	Project Contractor		Sheet	
Depth	Samula / Taata	Water	Field Decords	Level	Depth			Legand	iter
(m)	Sample / Tests	(m)	Field Records	(mob)	(Thickness)		escription		Na
					(0.20) 0.20 (0.40)	Brown TOPSOIL with root	ets. ange and grey slightly sand vels are fine to coarse	y <u>• • • • • • • • • • • • • • • • • • •</u>	
0.50	B1				0.60	Soft brown mottled orange gravelly CLAY. Gravels are subrounded.	e and grey slightly sandy slig e fine to coarse subangular t	htly	
1.00	B2				0.90	Firm grey mottled brown s CLAY. Gravels are fine to	lightly sandy slightly gravelly coarse subangular to subrou	inded.	
					(0.50)	Firm to stiff grey mottled b gravelly CLAY. Gravels are subrounded.	rown slightly sandy slightly e fine to coarse subangular f	0 0 0 0 0 0 0 0 0 0 0 0 0 0	
2.00	B3				(0.80)	Stiff grey mottled brown sl CLAY. Gravels are fine to	ightly sandy slightly gravelly coarse subangular to subrou	inded.	
3.00	В4				2.80 (0.40) 3.20	Stiff grey mottled brown sl CLAY. Gravels are fine to Very stiff grey mottled brow	ightly sandy slightly gravelly coarse subangular to subrou wn slightly sandy slightly gra	inded.	
					- - - - - - - - - - - - - - - - - - -	CLAY. Gravels are fine to	coarse subangular to subrou	Inded.	
Plan				•	F	Remarks	d		
						Trial pit stable. Trial pit backfilled upon com	pletion.		
				•					
· ·					· ·				
				•		cale (approx)	Logged By	Figure No.	
						1:25	АМ	12960-06-23.TP	19

	Gro	und In	vestigations www.gii.ie	Irela	and I	Ltd	Site Tinahask			Trial Pi Numbe TP19	t er 9
Machine : 8 Method : 7	t Excavator rial Pit	Dimens 2.40m	ions x 0.70m x 4.05m (L x W x	:D)	Ground	Level (mOD)	Client Hayes Higgins			Job Numbe 12960-06	⊧r ∋-23
		Locatio	n	C	Dates 12	/07/2023	Project Contractor			Sheet 2/2	
Depth (m)	Sample / Tests	Water Depth (m)	Field Records		Level (mOD)	Depth (m) (Thickness)	D	escription		Legend	Water
4.05	B5						Complete at 4.50m				
		•					No groundwater encountere Trial pit stable. Trial pit backfilled upon com	d. pletion.			
						. s	Scale (approx) 1:25	Logged By AM	Figure 12960-	• No. •06-23.TF	219

S	Gro	und In	vestigations Ire www.gii.ie	eland	Ltd	Site Tinahask		Trial Pit Number TP20
Machine : 8 Method : T	t Excavator rial Pit	Dimens 2.60m	ions < 0.70m x 3.80m (L x W x D)	Ground	Level (mOD)	Client Hayes Higgins		Job Number 12960-06-23
		Locatio	n	Dates 12	2/07/2023	Project Contractor		Sheet 1/1
Depth (m)	Sample / Test	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	D	escription	Legend S
0.50	B1 B2				(0.30) 0.30 0.30 0.50 0.60 0.60 0.60	Brown TOPSOIL with root MADE GROUND: brown r sandy slightly gravelly CL/ subrounded to rounded gr pipe (possible land drain). subrounded. Soft brown mottled grey a gravelly CLAY. Gravels are Stiff grey mottled brown sl CLAY. Gravels are fine to	nottled grey and orange sligh AY with orange to yellow coa avel surrounding yellow plas Gravels are fine subangular nd orange slightly sandy slig e fine subangular to subroun ightly sandy slightly gravelly coarse subangular to subrou	htty rse tic to to to to to to to to to to to to to
2.20	вз				(1.60)	Very stiff grey mottled brov CLAY. Gravels are fine to	wn slightly sandy slightly gra coarse subangular to subrou	velly inded.
3.80	B4				3.80	Complete at 3.80m		· • • • • • • • • • • • • • • • • • • •
Plan		•		•	• •	Remarks	d.	/
· .				•		rnal pit stable. Trial pit backfilled upon com	pletion.	
		•		•				
· ·		•			 			
						Scale (approx)	Logged By	Figure No.
						1:25	АМ	12960-06-23.TP20































APPENDIX 3 – Soakaway Records





Tel: 01 601 5175 / 5176 Email: info@gii.ie Web: www.gii.ie

SA01

Soakaway Test to BRE Digest 365 Trial Pit Dimensions: 2.0m x 0.50m x 1.9m (L x W x D)

Date	Time	Water level (m bgl)
11/07/2023	0	-0.610
11/07/2023	1	-0.610
11/07/2023	62	-0.610
11/07/2023	168	-0.600
11/07/2023	311	-0.600

Start depth	Depth of Pit	Diff	75% full	25%full
0.61	1.900	1.290	0.9325	1.5775





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SA03

Soakaway Test to BRE Digest 365 Trial Pit Dimensions: 2.1m x 0.50m x 1.8m (L x W x D)

Date	Time	Water level (m bgl)
11/07/2023	0	-0.610
11/07/2023	1	-0.610
11/07/2023	76	-0.610
11/07/2023	176	-0.600
11/07/2023	311	-0.600

Start depth	Depth of Pit	Diff	75% full	25%full
0.61	1.800	1.190	0.9075	1.5025





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SA04

Soakaway Test to BRE Digest 365 Trial Pit Dimensions: 2.0m x 0.50m x 1.9m (L x W x D)

Date	Time	Water level (m bgl)
11/07/2023	0	-0.520
11/07/2023	1	-0.510
11/07/2023	34	-0.510
11/07/2023	143	-0.500
11/07/2023	286	-0.500

Start depth	Depth of Pit	Diff	75% full	25%full
0.52	1.900	1.380	0.865	1.555





Tel: 01 601 5175 / 5176 Email: info@gii.ie Web: www.gii.ie

SA05

Soakaway Test to BRE Digest 365 Trial Pit Dimensions: 2.1m x 0.50m x 2.0m (L x W x D)

Date	Time	Water level (m bgl)
11/07/2023	0	-0.520
11/07/2023	1	-0.520
11/07/2023	17	-0.530
11/07/2023	129	-0.510
11/07/2023	272	-0.520

Start depth	Depth of Pit	Diff	75% full	25%full
0.52	2.000	1.480	0.89	1.63





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SA06

Soakaway Test to BRE Digest 365 Trial Pit Dimensions: 2.2m x 0.50m x 2.0m (L x W x D)

Date	Time	Water level (m bgl)
11/07/2023	0	-0.510
11/07/2023	1	-0.520
11/07/2023	3	-0.520
11/07/2023	120	-0.510
11/07/2023	323	-0.510

Start depth	Depth of Pit	Diff	75% full	25%full
0.51	2.000	1.490	0.8825	1.6275



APPENDIX 4 – Dynamic Probe Records



	Gro	und Investigations www.gii.ie	Ireland	Ltd	Site Tinaha	ask							Prob Num DPH	e ber 101
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	s Higgins							Job Num 12960-	ber 06-23
Hammer w	eight song	Location	Dates 02/0	08/2023	Engine	er							Shee 1/	t 1
Depth (m)	Blows for Depth Increment	t Field Records	Level (mOD)	Depth (m)	0	3 6	Blows	for Dep	oth Inc	rement	21	24 2	27	30
0.00-0.10	1			0.00								-		+
0.10-0.20	2			-										<u> </u>
0.20-0.30 0.30-0.40	23			- -										
0.40-0.50 0.50-0.60	2 3			0.50										
0.60-0.70	2													-
0.70-0.80 0.80-0.90	3 3													
0.90-1.00	2			 										
1.10-1.20	4													
1.20-1.30 1.30-1.40	55													
1.40-1.50	6			- - - 1.50										
1.60-1.70	5													-
1.70-1.80	6			-			,							
1.90-2.00	6			-										
2.00-2.10	6			2.00										
2.20-2.30	7			-										-
2.30-2.40	7						1							
2.50-2.60	6			2.50			1							
2.70-2.80	8			-										
2.80-2.90	7			-			C							
3.00-3.10	9			3.00										-
3.10-3.20	11			- 										
3.30-3.40	15			-										
3.50-3.60	20			3.50 										
3.60-3.70	20													
				-										
				4.00										
				-										
				- 										
				4.50										
				-										-
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				5.00										
Remarks											(Scale approx)	Logg By	ed
											-	1:25 Figure	J(No.	2
												12960-0	6-23.D	PH01

	Gro	und Investigations	Ltd	Site								Prob Num	e ber	
		www.gii.ie			Tinaha	ask							DPH	102
Machine : T	Tecop TEC10 Dynamic Probe	Cone Dimensions	Ground L	Level (mOD)	Client Hayes	s Higgins							Job Num	ber
		Location	Dates		Engine	er							Shee	
			03/0)8/2023									1/	1
Depth (m)	Blows for Depth Incremen	t Field Records	Level (mOD)	Depth (m)	0	2 6	Blow	s for De	pth Inc	rement	04 (20
0.00-0.10	0			0.00			9							+
0.10-0.20	0		-	-										
0.20-0.30 0.30-0.40	03			-										
0.40-0.50 0.50-0.60	2 2			 										+
0.60-0.70	3												<u> </u>	+
0.70-0.80 0.80-0.90	2 3													+
0.90-1.00 1.00-1.10	33			 1.00										_
1.10-1.20	3			-										
1.20-1.30 1.30-1.40	4 5			-										
1.40-1.50 1.50-1.60	4 5			 										+
1.60-1.70	4			-										+
1.70-1.80 1.80-1.90	5 5		-	-										+
1.90-2.00 2.00-2.10	5													
2.10-2.20	5			-										
2.20-2.30 2.30-2.40	5 6													—
2.40-2.50	5			- - - 2.50										+
2.60-2.70	7												<u> </u>	+
2.70-2.80 2.80-2.90	7 10													+
2.90-3.00 3 00-3 10	13			- - - 300										
3.10-3.20	20			- 										
3.20-3.30 3.30-3.40	23 25													+
				- - - 3.50										+
														+
				-										<u> </u>
				- - - 4.00										
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				 5.00										
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	Gro	und Investigations www.gii.ie	Ireland	l Ltd	Site Probe Number Tinahask DPH0
Method Dynamic Pr Fall Height Hammer We	obe DPH, 500mm eight 50Kg	Cone Dimensions	Ground I	Level (mOD)	Client Job Hayes Higgins 12960-06-
	0	Location	Dates 03/0	08/2023	Engineer Sheet 1/1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	Blows for Depth Increment 0 3 6 9 12 15 18 21 24 27 30
0.00-0.10	0			0.00	
0.10-0.20	0			-	
0.20-0.30 0.30-0.40	0 0			- 	
0.40-0.50 0.50-0.60	0			0.50	
0.60-0.70	1			-	
0.70-0.80 0.80-0.90	3 2				
0.90-1.00	3				
1.10-1.20	3				
1.20-1.30	4			-	
1.40-1.50	4				
1.50-1.60	5			— 1.50 —	
1.70-1.80	6				
1.90-2.00	6			-	
2.00-2.10	5			2.00	
2.10-2.20	5			- 	
2.30-2.40	7			-	
2.50-2.60	9			2.50	
2.60-2.70	12			-	
2.80-2.90	15			-	
2.90-3.00 3.00-3.10	17 17			3.00	
3.10-3.20	19				
3.20-3.30 3.30-3.40	20 23			- -	
3.40-3.50	24				
				-	
				-	
				4.00	
				-	
				-	
				- 4.3U -	
				-	
				- 	
Remarks				5.00	Scale (approx)
					1:25 JC Figure No.

	Gro	und Investigations Ii www.gii.ie	reland	Ltd	Site Tinah	ask								Prob Num DPH	e ber 104
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground L	₋evel (mOD)	Client Hayes	s Higgins	5							Job Numl 12960-1	ber 06-23
	eight Jong	Location	Dates 03/0	08/2023	Engine	er								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3 6		Blows	for De	pth Inc	rement	t 21	24		30
0.00-0.10	0			0.00						-			-	+	F
0.10-0.20	0			-											_
0.20-0.30 0.30-0.40	0			-											
0.40-0.50 0.50-0.60	0			 											T
0.60-0.70	3			-											+
0.70-0.80 0.80-0.90	2 3			-											+
0.90-1.00	3			 											
1.10-1.20	4														
1.20-1.30	4			-											T
1.40-1.50	5			-											+
1.50-1.60	6			— 1.50 - —											_
1.70-1.80	6			-											
1.80-1.90	6			-											
2.00-2.10	5			2.00											\top
2.10-2.20	5			- 											+
2.30-2.40	5														_
2.50-2.60	6			2.50											
2.60-2.70	7			-											
2.80-2.90	10		-												+
2.90-3.00 3.00-3.10	13 14			3.00											+
3.10-3.20	17														
3.20-3.30 3.30-3.40	20 25														
				3.50									1		<u> </u>
				-											+
				-											+
				-											+
				-											+
				4.50 										<u> </u>	+
				-											
				 - 											
Remarks				5.00		<u> </u>		<u> </u>					Scale	Logg By	ed
												F	1:25 Figure	J(No.	0
													12960-0)6-23.D	PH04

S	Grou	und Investigations www.gii.ie	lreland	Ltd	Site Tinahasl	ĸ							Probe Numb DPH	er 05
Method Dynamic Pro Fall Height 5 Hammer We	obe DPH, 500mm eight 50Kg	Cone Dimensions	Ground I	Level (mOD)	Client Hayes H	liggins							Job Numb 12960-06	er 6-23
		Location	Dates	08/2023	Engineer								Sheet 1/1	
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0 3	6	Blows 9	for De	pth Inc 15	rement	21	24 2	27 3	30
0.00-0.10	0			0.00				+				+		-
0.10-0.20	0			-										<u> </u>
0.30-0.40	2			-										
0.40-0.50 0.50-0.60	23			0.50										
0.60-0.70	3													
0.70-0.80 0.80-0.90	23			- 										-
0.90-1.00 1.00-1.10	3 4			 1.00		1								<u> </u>
1.10-1.20	4			-										
1.20-1.30 1.30-1.40	4 5					$\Box \top$								
1.40-1.50 1.50-1.60	5 5			 										\vdash
1.60-1.70	6													
1.70-1.80 1.80-1.90	5 6			-										
1.90-2.00	6			-		_								
2.00-2.10	5													
2.20-2.30	5													-
2.30-2.40	7			-		_								<u> </u>
2.50-2.60	9			2.50										
2.70-2.70	13													
2.80-2.90	16			-										
3.00-3.10	20 22			3.00										-
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Remarks				5.00								Scale (approx)	Logge By	èd
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	Gro	und Investigations I www.gii.ie	reland	Ltd	Site Tinaha	ask							Probe Num DPH	e ber 106
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground L	₋evel (mOD)	Client Hayes	s Higgins							Job Num! 12960-'	ber 06-23
Hammer w	eight song	Location	Dates 02/0	08/2023	Engine	er							Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3 6	Blows	for Dep	oth Inci	rement	21	24	27	30
0.00-0.10	0			0.00									+	F
0.10-0.20	0			-										<u> </u>
0.20-0.30 0.30-0.40	0			-										
0.40-0.50 0.50-0.60	0 2			 										
0.60-0.70	3		-	- 										+
0.70-0.80 0.80-0.90	2 2		-	-										+
0.90-1.00	3			 										
1.10-1.20	4			-										
1.20-1.30 1.30-1.40	34			-										
1.40-1.50	3		-	- - 1.50										-
1.60-1.70	5													_
1.70-1.80	4			-										
1.90-2.00	5			-										
2.00-2.10	5			2.00										
2.20-2.30	6		-	-										+
2.30-2.40	6		-	-										+-
2.50-2.60	5			2.50										
2.80-2.70	5			- 										
2.80-2.90	5			-										—
3.00-3.10	8			3.00										+
3.10-3.20	9		-	-										_
3.30-3.40	14			-										
3.40-3.50 3.50-3.60	17 18			3.50										
3.60-3.70	20			-										+
3.70-3.80 3.80-3.90	22 25			-										-
				4.00								Γ		_
			-	- -										
				-										
			-	4.50										-
				-										
				-										_
Remarks		1		0.00						1		Scale (approx)	Logg By	ed
											-	1:25 Figure	J(No.	C
												12960-0	16-23.D	PH06

	Gro	und Investigations	Ltd	Site									Prob Num	e ber	
		www.gii.ie			Tinah	ask								DPH	107
Machine :	Tecop TEC10 Dynamic Probe	Cone Dimensions	Ground I	Level (mOD)	Client Haye	s Higgins	;							Job Num	ber
		Loootion	Detec		Enging									12960-1	06-23
		Location	02/0	08/2023	Engine	er								5nee 1/	/1
Depth (m)	Blows for Depth Incremen	t Field Records	Level (mOD)	Depth (m)	0	2 6	I	Blows f	for Dep	pth Inc	rement		24		20
0.00-0.10	0			0.00					2			21	24 /	<u></u>	+
0.10-0.20	0			-											
0.20-0.30 0.30-0.40	0			-											
0.40-0.50 0.50-0.60	03		-	 											+
0.60-0.70	2													<u> </u>	+
0.70-0.80 0.80-0.90	4 3														+
0.90-1.00 1.00-1.10	32		-	 1.00											_
1.10-1.20	3			-											
1.20-1.30 1.30-1.40	3 4			-											Τ
1.40-1.50 1.50-1.60	4 5			 											+
1.60-1.70	6			-										<u> </u>	+
1.70-1.80 1.80-1.90	5 7						-							<u> </u>	+
1.90-2.00	7		-	2 00											
2.10-2.20	7						-								
2.20-2.30 2.30-2.40	7 6			-											T
2.40-2.50	7			- - - 2.50											+
2.60-2.70	9			-											+
2.70-2.80 2.80-2.90	10 14			-											+
2.90-3.00 3 00-3 10	13			- - - 300											
3.10-3.20	17			-											
3.20-3.30 3.30-3.40	20 21														\top
3.40-3.50	24			- - - 3 50											+
				- 											+
															_
				- - - 4.00											
															+
														+	+
				- -										<u> </u>	+
													<u> </u>		\perp
				- 											
Remarks	1	1											Scale approx	Logg By	jed
												_	1:25 Figure	J(No.	c
													12960-0)6-23.C	PH07

	Gro	und Investigations www.gii.ie	Ireland	Ltd	Site Tinaha	ask							Prob Num	e ber 108
Method Dynamic Pr Fall Height	robe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	Higgins							Job Num 12960-	ber 06-23
	eight Sorg	Location	Dates 02/0)8/2023	Enginee	er							Shee 1/	∶t /1
Depth (m)	Blows for Depth Incremen	Field Records	Level (mOD)	Depth (m)	0 3	3 6	Blows 9	for Dep 12 1	pth Inc	rement	21	24 2	27	30
0.00-0.10	0			0.00										+
0.10-0.20	0		-											+-
0.20-0.30	2			-										
0.40-0.50 0.50-0.60	3 3			0.50										
0.60-0.70	3													+
0.70-0.80 0.80-0.90	3 2			-										+
0.90-1.00	3			 										
1.10-1.20	2													
1.20-1.30 1.30-1.40	22													<u> </u>
1.40-1.50	3			- 										+
1.60-1.70	3													+-
1.70-1.80	4		-	-										1
1.90-2.00	5			-										
2.00-2.10	6			2.00										<u> </u>
2.20-2.30	6			-										+
2.30-2.40	6		-											+
2.50-2.60	6			2.50										
2.70-2.70	6			- 										
2.80-2.90	7			-										+
3.00-3.10	9			3.00										+
3.10-3.20	12													+
3.30-3.40	20			-										
3.40-3.50	25			3.50										
														+
				- 										+
				4.00										+
				-										
				-										
				4.50										+
				 										+
														_
				- - 5.00										
Remarks	1	1						1		1	(Scale approx)	Logo By	jed
												1:25 Figure	J No.	С
											1	2960-0	6-23.C	PH08

	Gro	und Investigations I www.gii.ie	reland	Ltd	Site Tinah	ask								Prob Num DPH	e ber 109
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	s Higgin	s							Job Num 12960-	ber 06-23
Traininer W	eight Jong	Location	Dates 02/0)8/2023	Engine	er								Shee 1/	i t '1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3	6	Blows	for De	pth Inc 15	rement	21	24 2		30
0.00-0.10	0			0.00											ŧ
0.10-0.20	0			-											+
0.20-0.30	0			-											
0.40-0.50 0.50-0.60	0 0			0.50											
0.60-0.70	0			-											+
0.70-0.80 0.80-0.90	23			-											+
0.90-1.00 1.00-1.10	4 3			 1.00											_
1.10-1.20	3			- 											
1.20-1.30 1.30-1.40	4 4														
1.40-1.50	7			 										-	+
1.60-1.70	8														+
1.70-1.80	8														
1.90-2.00	9			-											
2.00-2.10	10														
2.20-2.30	11			-											+
2.30-2.40	12			-										<u> </u>	+-
2.50-2.60	15			2.50										<u> </u>	_
2.70-2.80	20			-											
2.80-2.90	21														<u> </u>
2.30-3.00	23			3.00									-		+
															+
				-											
				3.50											
				-											+
				- 											+
				4.00											_
				-											
				4.50											+
				- 										<u> </u>	-
				-											
				 5.00											
Remarks	1	1				I	1		1		1		Scale approx)	Logg By	jed
													1:25	J	С
												F	Figure	No.	
													12960-0	6-23.D	PH09

	Gro	und Investigations Ii www.gii.ie	reland	Ltd	Site Tinaha	ask								Prob Num	e ber 110
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	i Higgin	S							Job Num 12960-	ber 06-23
nammer w	eight song	Location	Dates 02/0	08/2023	Engine	ər								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	36	3	Blows	for De	pth Inc	rement	t 21	24 2	27	30
0.00-0.10	0			0.00						-	-		-		+
0.10-0.20	1														_
0.20-0.30 0.30-0.40	2			- 											
0.40-0.50 0.50-0.60	2 3			0.50											
0.60-0.70	3			-											+
0.70-0.80 0.80-0.90	2 2														_
0.90-1.00	3			 											
1.10-1.20	3														
1.20-1.30	4 4														
1.40-1.50	4			- 4 50											+
1.60-1.70	5			- 1.50 											_
1.70-1.80	5														
1.90-2.00	5			-											
2.00-2.10	5			2.00											
2.20-2.30	6			-											_
2.30-2.40	6						_								_
2.50-2.60	6			2.50											
2.60-2.70	7														
2.80-2.90	7			-											+
2.90-3.00 3.00-3.10	6 7			3.00											-
3.10-3.20	7														
3.20-3.30 3.30-3.40	8			-											
3.40-3.50 3.50-3.60	11 20														
3.60-3.70	25														-
				-											-
				4.00											
				-											
				- 											+
				- +.JU -											_
				-											
				-											
Remarks	<u> </u>	I		5.00		<u> </u>	<u> </u>	<u> </u>	l		<u> </u>		Scale approx)	Logg By	ed
												-	1:25 Figure	Jo No.	2
													12960-0	6-23.D	PH1

S	Gro	Site Tinahask									Probe Number				
Method Dynamic P Fall Height Hammer W	robe DPH, 500mm /eight 50Kg	Cone Dimensions	Ground	Level (mOD)	Client Hayes Higgins Engineer										er 6-23
		Location	Dates	08/2023											Sheet 1/1
Depth (m)	Blows for Depth Incremen	Field Records	Level (mOD)	Depth (m)	Blows for Depth Increment 0 3 6 9 12 15 18 21 24										80
0.00-0.10	1			0.00						-					_
0.10-0.20	3			- 						_					_
0.30-0.40	2														
0.40-0.50	2			0.50											
0.60-0.70	3														
0.80-0.90	2			 - 											_
0.90-1.00 1.00-1.10 1.00-1.20	3 3 3			- 1.00						_					
1 20-1 30	4														
1.30-1.40	5			 - 											
1.40-1.50 1.50-1.60	5			- - 1.50											
1.60-1.70	5			-											
1.80-1.90	5			 - 											
1.90-2.00 2.00-2.10	5 6			2.00											
2.10-2.20	5			-											
2.20-2.30 2.30-2.40	6			- -											
2.40-2.50 2.50-2.60	6 5			2.50											
2.60-2.70	6														
2.70-2.80 2.80-2.90	6			- -											
2.90-3.00 3.00-3.10	6 7			3.00											
3.10-3.20	8														
3.20-3.30 3.30-3.40	10 12			- 											
3.40-3.50 3.50-3.60	14 20														
3.60-3.70	25			- 											-
				-											_
				 4.00											
				- 											
				-											
				 4.50											<u> </u>
				- 											<u> </u>
				5.00											
Remarks					• •		1		·	1		; (i	Scale approx)	Logge By	d
												ļ	1:25 Figure I	JC No.	
												12	960-06-	23.DPH	I-TI

Ground Investigations Ireland Ltd							Site Tinahask									
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	s Higgins	;							Job Numl 12960-(ber 06-23	
	eight Jong	Location	Dates 02/0	Engineer										t 1		
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	24 2		30								
0.00-0.10	0			0.00											+	
0.10-0.20	0													<u> </u>	+	
0.20-0.30	0			-												
0.40-0.50 0.50-0.60	0 2			0.50												
0.60-0.70	3			-											-	
0.70-0.80 0.80-0.90	3 2			-										<u> </u>	-	
0.90-1.00	3			 												
1.10-1.20	4															
1.20-1.30	4			_												
1.40-1.50	5			-										<u> </u>	+-	
1.50-1.60	6			— 1.50 —											_	
1.70-1.80	5			- 												
1.80-1.90	6															
2.00-2.10	6			2.00											+	
2.10-2.20	6													<u> </u>		
2.30-2.40	6			-												
2.40-2.50 2.50-2.60	6 7			2.50												
2.60-2.70	6						_									
2.70-2.80 2.80-2.90	7 9			-												
2.90-3.00 3.00-3.10	12 17															
3.10-3.20	21															
3.20-3.30	25															
															-	
				3.50 											-	
				- 												
				4.00											-	
				-											+-	
				4.50												
				- 										<u> </u>	+	
				5.00												
Remarks												(Scale approx)	Logg By	ed	
													1:25 Figure	JC No.	C	
												1	2960-0	6-23.D	PH12	

Ground Investigations Ireland Ltd							Site Tinahask									
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes		Job Num 12960-	ber 06-23								
nammer w	eight song	Location	Dates 03/0	Engine		Shee 1/	Sheet 1/1									
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	24		30								
0.00-0.10	0			0.00							-		+	-	Ŧ	
0.10-0.20	0			-												
0.20-0.30 0.30-0.40	2 2			- 												
0.40-0.50 0.50-0.60	23			 											\top	
0.60-0.70	2			-											+	
0.70-0.80 0.80-0.90	2 3														+-	
0.90-1.00 1.00-1.10	33			 1.00											<u> </u>	
1.10-1.20	3			- 												
1.20-1.30 1.30-1.40	4 4															
1.40-1.50 1.50-1.60	5 4			 											+	
1.60-1.70	5			-											+	
1.70-1.80 1.80-1.90	5 5														+	
1.90-2.00 2.00-2.10	5 5			- 2.00											_	
2.10-2.20	6			- -												
2.20-2.30 2.30-2.40	6 6															
2.40-2.50	6			- - - 2.50											+	
2.60-2.70	6			-											+	
2.70-2.80 2.80-2.90	7														<u> </u>	
2.90-3.00	7			- 												
3.10-3.20	8			 												
3.20-3.30 3.30-3.40	777														+	
3.40-3.50	9														+	
3.60-3.70	0 11			3.50 											+	
3.70-3.80	14															
3.90-4.00	20			-												
4.00-4.10	24			4.00 											+	
1.10 1.20	20													<u> </u>	+	
															_	
				4.50												
															+	
Remarks				5.00									Scale	Logg By	jed	
												-	1:25 Figure	J(No.	C	
													12960-0)6-23.E	PH13	

Ground Investigations Ireland Ltd							Site Tinahask								
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground	Level (mOD)	Client Hayes	s Higgin:			Job Numi 12960-(ber 06-23					
	eight sorg	Location	Dates 02/08/2023		Engine	er		Shee 1/	t 1						
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Level Depth (mOD) (m)			Blows for Depth Increment								
0.00-0.10	0			0.00				9					24 2		
0.10-0.20	2														
0.20-0.30 0.30-0.40	2 1														
0.40-0.50	0			- 0.50											+
0.60-0.70	2													<u> </u>	+
0.70-0.80 0.80-0.90	3 3														+
0.90-1.00	3			 											
1.10-1.20	4			-											
1.20-1.30 1.30-1.40	5 4														
1.40-1.50	4			- - - 1.50											+
1.60-1.70	6													<u> </u>	+
1.70-1.80 1.80-1.90	7														
1.90-2.00	8			- - - 2.00											
2.10-2.20	11														
2.20-2.30 2.30-2.40	15 14														+
2.40-2.50	12			- 											+
2.60-2.70	12			2.50 										<u> </u>	+
2.70-2.80	12			-											
2.90-3.00	13														
3.00-3.10	12			3.00 											T
3.20-3.30	15			- 											+
3.40-3.50	20			-										<u> </u>	+
3.50-3.60	25			3.50 											<u> </u>
				- 											
				4.00 											+
				- -										<u> </u>	+
				-											<u> </u>
				4.50											
				- 											
															\top
Remarks				5.00									Scale	Logg By	ed
												·	1:25 Figure	J(No.	2
													12960-0	6-23.D	PH14

Ground Investigations Ireland Ltd							Site Tinahask									
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	Client Hayes	s Higgins	S							Job Num 12960-	ber 06-23	
	eight Jong	Location	Dates 03/0	08/2023	Engineer										r t 1	
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	Blows for Depth Increment 0 3 6 9 12 15 18 21 2 ⁴										30	
0.00-0.10	0			0.00											Ŧ	
0.10-0.20	0														<u> </u>	
0.20-0.30 0.30-0.40	0			-												
0.40-0.50 0.50-0.60	2 2			 												
0.60-0.70	3			-											+	
0.70-0.80 0.80-0.90	2 2			-											+	
0.90-1.00	2			 												
1.10-1.20	3		-													
1.20-1.30 1.30-1.40	4			-												
1.40-1.50	6			- - - 1.50												
1.60-1.70	6															
1.70-1.80	6			-												
1.90-2.00	6		-	-												
2.00-2.10	8			2.00												
2.20-2.30	7			-												
2.30-2.40	9			-												
2.50-2.60	10			2.50												
2.70-2.80	12			-												
2.80-2.90	15			 - 												
3.00-3.10	20			3.00 											-	
3.10-3.20	20			-												
0.20 0.00																
				3.50												
				-												
				- 												
				4.00											_	
				-												
				-												
			-	4.50											-	
				-											+	
				-												
				- 5.00												
Remarks				-									Scale (approx)	Logg By	ed	
												-	1:25 Figure	Ji No.	0	
													12960-0	6-23.C	PH1	

Ground Investigations Ireland Ltd							Site Tinahask									
Method Dynamic Pr Fall Height	robe DPH, 500mm	Cone Dimensions	Ground L	₋evel (mOD)	Client Hayes Higgins										ber 06-23	
Hammer w	eigni sokg	Location	Dates 03/0	8/2023	Engineer										e t '1	
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	Blows for Depth Increment										30	
0.00-0.10	0			0.00		Ĭ						1			+	
0.10-0.20	0														_	
0.20-0.30	0			- 												
0.40-0.50 0.50-0.60	0			 												
0.60-0.70	0			-											+	
0.70-0.80 0.80-0.90	0 0														+	
0.90-1.00	3			 												
1.10-1.20	2															
1.20-1.30 1.30-1.40	32			 - 											\top	
1.40-1.50	3			- - - 1.50											+	
1.60-1.70	3			- 											+	
1.70-1.80	4			-											_	
1.90-2.00	4			-												
2.00-2.10	5			2.00												
2.20-2.30	3			-											+	
2.30-2.40	3		-	-											+	
2.50-2.60	5			2.50												
2.70-2.70	5			- -												
2.80-2.90	6															
3.00-3.10	6			3.00 											+	
3.10-3.20	8														+	
3.30-3.40	8															
3.50-3.60	12			3.50												
3.60-3.70	15			-											\square	
3.80-3.90	21		-	-											+	
3.90-4.00	25			4.00											+	
				-											\perp	
				- 												
				4.50											\top	
				-									-		+	
				-											+	
				5.00												
Remarks													Scale approx)	Logg By	jed	
												-	1:25 Figure	Ji No.	С	
													12960-0	6-23.E	PH16	
	Gro	und Investigations www.gii.je	Ireland	Ltd	Site Tinaha	ask								Probe Numi	Ber 117	
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Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	Higgins	;							Job Num 12960-'	ber 06-23	
	eight sorg	Location	Dates)8/2023	Engine	ər								Shee 1/	t 1	
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0		I	Blows	for De	pth Inc	rement	t D4	24		20	
0.00-0.10	1			0.00			9						24 /			
0.10-0.20	2															
0.20-0.30 0.30-0.40	2 3															
0.40-0.50 0.50-0.60	23			 											+	
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1.20-1.30	4														+	
Cround Investigations Ireland Ltd Site Transk Method Paramic Problem Element Weight Solor Dates Cone Dimensions Ground Level (mOD) Clent Hayse Higgins Location Dates Engineer 2082/023 Depth Depth Interment Field Records (mOD) Dient 0.000-1/10 1 0.00 0.01 0.01 0.02 0.02 0.000-1/10 1 0.00 0.01 0.00<									+							
1.60-1.70	5	Ground Investigations Ireland Ltd www.gil.ie Site Transak earth ht Gorg Ground Level (mOD) Client Haves Hagins Location Dates COORCO2 Enginer applinition Field Records (600) 0/601 0 <td></td> <td>-</td>			-											
1.70-1.80	5		Site Site Rig Rig <th< td=""><td></td><td></td></th<>													
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2.80-2.90	8			-				_								
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With gar. 2 Oround Level (MOD) Client Hayse Higgins Data Data Engineer 0000-100 1 0.000-000										1:25 Figure	J(No.	2				
													12960-0	6-23.D	PH17	

	Gro	und Investigations www.gii.ie	Ireland	Ltd	Site Tinaha	ask								Prob Num	e ber 118
Method Dynamic Pri Fall Height s	obe DPH, 500mm	Cone Dimensions	Ground I	_evel (mOD)	Client Hayes	Higgins								Job Num 12960-	ber 06-23
Hammer we	eigni sukg	Location	Dates 03/0	08/2023	Engine	er								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	2 6	E	Blows	for Dep	oth Inc	rement	24	24 (7	20
0.00-0.10	0			0.00			9		2 1	5		21 .	24 2		
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0.20-0.30 0.30-0.40	0			-											
0.40-0.50	2			 0_50											\top
0.60-0.70	2														+
0.70-0.80 0.80-0.90	32			-											+
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1.10-1.20	4														
1.20-1.30 1.30-1.40	4			-											\Box
1.40-1.50	5			- 1.50											+
1.60-1.70	5			-											+
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1.90-2.00	5		WWW.GUI.IC Ground Level (mOD) Client Hayas Higgins Job 1000 Page Higgins Job 1000 Job 10000 Job 1000 Job 10000												
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2.70-2.80	8			-											
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												1	F igure 2960-0	No. 6-23.D	PH18

	Gro	und Investigations www.gii.ie	Ireland	Ltd	Site Tinah:	ask								Probe Numb	e ber 119
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	_evel (mOD)	Client Hayes	s Higgins	3							Job Numi 12960-(ber 06-23
nammer wo	eigni song	Location	Dates 02/0	08/2023	Engine	er								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	2 6		Blows f	for Dep	oth Inc	rement	21	24 7		20
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1.30-1.40	5			-											+
1.50-1.60	5			1.50											
1.70-1.80	5			-											
1.80-1.90	5		Site Trabuak Site Trabuak<				T								
2.00-2.10	5			2.00											+
2.10-2.20	7			-											+
2.30-2.40	7			-											
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2.60-2.70	12			- 											+
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									-	1:25 Figure	JC No.	2			
													12960-0	6-23.D	PH19

	Gro	und Investigations Ii www.gii.ie	reland	Ltd	Site Tinah	ask								Prob Num DPH	e ber 120
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	Client Hayes	s Higgin	s							Job Num 12960-	ber 06-23
Hammer w	eight song	Location	Dates 03/0	08/2023	Engine	er								Shee 1/	t '1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3	3	Blows	for De	pth Inc	rement	21	24 2	27	30
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0.20-0.30 0.30-0.40	0			-											
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0.60-0.70	3			-											+
0.70-0.80 0.80-0.90	3 2			 - 											+
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1.10-1.20	3			-		1									
1.20-1.30 1.30-1.40	33			-											\top
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1.60-1.70	6			-										<u> </u>	+
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1.90-2.00	7			- 											
2.10-2.10	8														
2.20-2.30	8			-											+
2.40-2.50	7			-										<u> </u>	+
2.50-2.60	8			2.50											_
2.70-2.80	8			-											
2.90-2.90	8			- -											
3.00-3.10	10			3.00 											+
3.20-3.30	14			- 											+
3.30-3.40	17 20			-											
3.50-3.60	22			3.50											
3.00-3.70	25			-									μ.		
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Remarks				5.00									Scale	Logo	
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													Figure	J(No.	ر
													12960-0	6-23.D	PH20

S	Gro	und Investigations	Ireland	Ltd	Site Tinaha	ask								Prob Num	e ber 121
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	Higgins	6							Job Num 12960-	ber 06-23
Hammer W	eight 50Kg	Location	Dates 03/0	08/2023	Enginee	er								Shee 1/	: t /1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	2 6		Blows	for De	pth Inc	rement	t 24	24 (20
0.00-0.10	1			0.00)	9				21	24 2		=
0.10-0.20	2			-											
0.20-0.30 0.30-0.40	3 3			-											
0.40-0.50	3			 											+
0.60-0.70	3														+
0.70-0.80 0.80-0.90	22			-											+
0.90-1.00	3			 1.00											
1.10-1.20	2														
1.20-1.30	3														\top
1.40-1.50	3														+
1.60-1.70	3			- 1.50 											+
1.70-1.80 1.80-1.90	4 4			-											_
1.90-2.00	4			- 2.00											
2.00-2.10	5			2.00											
2.20-2.30	5														+
2.40-2.50	5			-											+
2.50-2.60 2 60-2 70	5			2.50 											+
2.70-2.80	6			- -											
2.80-2.90	8			-											
3.00-3.10	9			3.00											+
3.20-3.30	16														+
3.30-3.40	21														_
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	Gro	und Investigations I www.gii.ie	reland	Ltd	Site Tinaha	ask								Prob Num DPH	e ber 122
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	s Higgins	6							Job Num 12960-	ber 06-23
nammer w	eignt song	Location	Dates 03/0	08/2023	Engine	er								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3 6		Blows	for Dep	oth Inc	rement	21	24		30
0.00-0.10	0			0.00		-			-				-	-	+
0.10-0.20	0														<u> </u>
0.20-0.30 0.30-0.40	0			- 											
0.40-0.50 0.50-0.60	0 2			 											
0.60-0.70	2			- 											
0.70-0.80 0.80-0.90	3 3		-	-											+
0.90-1.00	3			 											
1.10-1.20	4			-											
1.20-1.30 1.30-1.40	45			-											
1.40-1.50	5		-	- 											
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1.40-1.50 5 1.50-1.60 5 1.60-1.70 5 1.70-1.80 6 1.80 1.00 5											_				
1.90-2.00	7		-	-											
2.00-2.10	6			2.00 											
2.20-2.30	7		-	-											+
2.30-2.40	6		-	-											-
2.50-2.60	7			2.50											
2.70-2.80	6			- 											
2.80-2.90	6														
3.00-3.10	8			3.00 											
3.10-3.20	8		-												-
3.30-3.40															
3.40-3.50 3.50-3.60	11 16			3.50											
3.60-3.70	17														
3.80-3.90	20			- 											+
3.90-4.00	23			4.00											
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				- 											
Remarks	1	1	Ē									(Scale approx)	Logg By	ed
													1:25 Figure	J(No.	C
												1	12960-0	16-23.D	PH22

	Gro	und Investigations www.gii.ie	reland	Ltd	Site Tinaha	ask							Prob Num	e ber 123
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	Client Hayes	Higgins	;						Job Num 12960-	ber 06-23
Hammer w	eight song	Location	Dates 03/0	08/2023	Engine	ər							Shee 1,	e t '1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3 6	BI	ows for De	pth Inc	rement	21 2	24	07	30
0.00-0.10	0			0.00										+
0.10-0.20	0			-										
0.20-0.30 0.30-0.40	000			-										
0.40-0.50	0			- 0.50										+
0.60-0.70	0			-										+
0.70-0.80 0.80-0.90	3 2			 - 										+-
0.90-1.00	3 4		-	 										
1.10-1.20	4			-										
1.20-1.30 1.30-1.40	4 5			-										\square
1.40-1.50	6			- - - 1.50										+
1.60-1.70	6			- 										+
1.70-1.80 1.80-1.90	6 6		-	-										+
1.90-2.00	6			- - - 2.00										
2.10-2.20	7						- I							
2.20-2.30 2.30-2.40	6 6			 - 										+
2.40-2.50	7			- 2.50										+
2.60-2.70	6													+
2.70-2.80	7			-										
2.90-3.00	7			-			-							
3.10-3.10	8			3.00 										
3.20-3.30	8			 - 										+
3.40-3.50	10			-										+
3.60-3.60	10			- 3.50 - -										+
3.70-3.80	11													
3.90-4.00	13			-										
4.00-4.10	15			4.00 										
4.20-4.30	20			-										+
4.40-4.50	24			-										+
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											1	2960-0	6-23.C	PH2

	Gro	und Investigations www.gii.ie	Ireland	Ltd	Site Tinaha	ask							Probe Numb) ber 24
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	Client Hayes	s Higgins							Job Numl 12960-(5er 06-23
nammer wo	eight song	Location	Dates	08/2023	Engine	er							Sheet 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	2 6	Blows	s for Dept	th Incre	ment	1 2	4		20
0.00-0.10	0			0.00			9					4 2		50
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0.20-0.30 0.30-0.40	0			-										
0.40-0.50	1			 0_50										\vdash
0.60-0.70	2													\vdash
0.70-0.80	3			-										_
0.90-1.00	3			-										
1.10-1.20	4			1.00										
1.20-1.30	4			-										\vdash
1.40-1.50	4			-										\vdash
1.50-1.60	5			1.50 									L	
1.70-1.80	4			-										
1.80-1.90	5			-										
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2.30-2.40	6			-										
2.40-2.50 2.50-2.60	6 9			2.50										
2.60-2.70	10			-										\top
2.70-2.80 2.80-2.90	12 17			-										\vdash
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	Gro	und Investigations I www.gii.ie	reland	Ltd	Site Tinah	ask								Probe Numb	e ber 125
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	Client Hayes	s Higgin	s							Job Numl 12960-(ber 06-23
nammer w	eight song	Location	Dates 02/0	08/2023	Engine	er								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3 6	6	Blows	for De	pth Inc 15	rement	21	24 2		30
0.00-0.10	0			0.00											+
0.10-0.20	0			-											<u> </u>
0.20-0.30 0.30-0.40	0			-											
0.40-0.50 0.50-0.60	0			 											
0.60-0.70	3			- 											+
0.70-0.80 0.80-0.90	2 3		-	-										<u> </u>	+
0.90-1.00	3			 											
1.10-1.20	3					-									
1.20-1.30 1.30-1.40	4			-											
1.40-1.50	4		-	- - 1.50											-
1.60-1.70	6														+
1.50-1.60 5 1.60-1.70 6 1.70-1.80 5 1.80-1.90 5															
1.90-2.00	5		-	-											
2.00-2.10	6			2.00											
2.20-2.30	7		-	-											+
2.30-2.40	7			-											<u> </u>
2.50-2.60	6			2.50											
2.70-2.80	7			-											
2.80-2.90	8		-	-											
3.00-3.10	12			3.00											+
3.10-3.20	13		-	-											+
3.30-3.40	20			 - 											
3.40-3.50 3.50-3.60	20 23			3.50											
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Remarks												(Scale approx)	Logg By	ed
													1:25 Figure	JC No.	2
												1	2960-0	6-23.D	PH25

	Gro	und Investigations www.gii.ie	s Ireland	Ltd	Site Tinaha	ask							Probe Numb)) 26
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground L	_evel (mOD)	Client Hayes	Higgins							Job Numi 12960-(5er 06-23
nanine v	eight ookg	Location	Dates 02/0	08/2023	Engine	ər							Sheet 1/ [.]	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	2 6	Blows	for De	pth Inc	rement		24 (20
0.00-0.10	0			0.00			9							+
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0.40-0.50	2		-	-										\vdash
0.50-0.60	3			0.50										-
0.70-0.80	2		-	- 										
0.80-0.90	3		-	-										
1.00-1.10	3		-	1.00										\vdash
1.10-1.20	10													\vdash
1.20-1.30 1.30-1.40	10 8		-	-										
1.40-1.50 1.50-1.60	8 9			 										\square
1.60-1.70	9			-										\vdash
1.70-1.80	9			-										
1.90-2.00	11		-	-										
2.00-2.10	14			2.00										\square
2.10-2.20	14			-										\vdash
2.30-2.40	16			-										
2.40-2.50 2.50-2.60	16 17			2.50										
2.60-2.70	20													\top
2.70-2.80 2.80-2.90	20 24			-								-		\vdash
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Remarks											(Scale approx)	Logg By	ed
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											Ī	Figure	No.	-
												12960-0	6-23.D	PH26

	Gro	und Investigations www.gii.je	lreland	Ltd	Site Tinah	ask								Probe Numb	e ber 127
Method Dynamic Pr Fall Height	robe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	Client Hayes	s Higgins								Job Numi 12960-(ber 06-23
	eight song	Location	Dates 02/0	08/2023	Engine	er								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	_	2 0		Blows	for Dep	oth Inc	rement	t	24		
0.00-0.10	0			0.00			:			5			24 2		
0.10-0.20	0			- 											
0.20-0.30 0.30-0.40	0														
0.40-0.50	1			- - - 0.50											+
0.60-0.70	3													<u> </u>	+
0.70-0.80 0.80-0.90	32			-										<u> </u>	+
0.90-1.00	4			- - - 1.00											
1.10-1.20	4														
1.20-1.30 1.30-1.40	5 6														T
1.40-1.50 1.50-1.60	6		-	 			_								+
1.60-1.70	6			-										<u> </u>	+
1.70-1.80 1.80-1.90	76														+
1.90-2.00	7			2 00											
2.10-2.20	6														
2.20-2.30 2.30-2.40	6 8			-											<u> </u>
2.40-2.50	8			- - - 2.50											+-
2.60-2.70	15													<u> </u>	+
2.70-2.80 2.80-2.90	17 21			-											_
2.90-3.00	24			- 											
5.00-5.10				 										1	
															+
				- - - 3 50											+
														<u> </u>	+
				-											
															+
				- - 150											+
															+
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				 5.00											
Remarks	1	I								1	1		Scale approx)	Logg By	ed
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												F	Figure	No.	
													12960-0	6-23.D	PH27

	Gro	und Investigations www.gii.ie	s Ireland	Ltd	Site Tinaha	ask								Prob Num DPH	e ber 128
Method Dynamic P Fall Height Hammer W	robe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	Client Hayes	s Higgins								Job Num 12960-'	ber 06-23
	oight oong	Location	Dates 02/0	08/2023	Engine	er								Shee 1/	t 1
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Depth (m)	0	3 6		Blows	for De	pth Inc	rement	: 21 :	24		30
0.00-0.10	0			0.00					-			-	+		ŧ
0.10-0.20	0			-											
0.20-0.30 0.30-0.40	0 3			-											
0.40-0.50 0.50-0.60	23			 											\top
0.60-0.70	3			-											+
0.70-0.80 0.80-0.90	23			-											+
0.90-1.00	3			 											
1.10-1.20	5														
1.20-1.30	4			 - 											+
1.40-1.50	6			-											+
1.60-1.60	7			— 1.50 - —			_								+
1.70-1.80	8			-											
1.90-2.00	7			- 			+								
2.00-2.10	8			2.00											+
2.20-2.30	8													<u> </u>	+
2.30-2.40	9			-											+
2.50-2.60	11			2.50											
2.60-2.70	14														Τ
2.80-2.90	20			-											+
2.90-3.00 3.00-3.10	23 25			3.00											+
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Remarks				5.00		<u> </u>		<u> </u>	<u> </u>		<u> </u>	(Scale approx)	Logg By	ied
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												1	2960-0	6-23.D	PH28

Ground Investigations Ireland Ltd						Site Tinahask									e ber 129	
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Level (mOD)	I) Client Hayes Higgins									Job Number 12960-06-2		
nammer w	eight song	Location	Dates 03/0	08/2023	Engineer									Sheet 1/1		
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Level Depth Blows for Depth Increment (mOD) 0 3 6 9 12 15 18 21									24	27	30	
0.00-0.10	0			0.00											Ŧ	
0.10-0.20	0														<u> </u>	
0.20-0.30 0.30-0.40	0			- 												
0.40-0.50 0.50-0.60	03			 												
0.60-0.70	2			- 												
0.70-0.80 0.80-0.90	3 3		-	-												
0.90-1.00	2			 												
1.10-1.20	3			-												
1.20-1.30 1.30-1.40	4 3			-												
1.40-1.50	4			- - - 150											-	
1.60-1.70	5														_	
1.70-1.80 1.80-1.90	4															
1.90-2.00	6			- 2.00												
2.00-2.10	5			2.00 												
2.20-2.30	5															
2.40-2.50	5			-												
2.50-2.60	5			2.50 												
2.70-2.80	6			- 												
2.80-2.90	9			-												
3.00-3.10	11			3.00												
3.10-3.20	14			- 											+	
3.30-3.40	18			-							1					
3.50-3.60	21			3.50												
3.60-3.70	24			-												
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				4.50												
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				5.00												
Remarks			_,I						-		•	(Scale approx)	Logg By	ed	
													1:25 Figure	Ji No.	C	
												1	2960-0)6-23.E	PH29	

	Site Tinahask								Probe Numb	obe mber PH30						
Method Dynamic Pr Fall Height Hammer W	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	Client Hayes	Higgins							Job Numl 12960-(5er 06-23		
nanine v	eight Song	Location	Dates 02/0	08/2023	Engineer									Sheet 1/1		
Depth (m)	Blows for Depth Incremen	Field Records	Level Depth Blows for Depth Increment											20		
0.00-0.10	0			0.00		3 0	9	12	15		- 12	24 2		30 		
0.10-0.20	0			-												
0.20-0.30 0.30-0.40	0 2			-												
0.40-0.50	2			-										\vdash		
0.50-0.60	2													+		
0.70-0.80	3			-												
0.80-0.90	3			-												
1.00-1.10	3			1.00										\vdash		
1.10-1.20	5			-										\vdash		
1.30-1.40	5															
1.40-1.50 1.50-1.60	6 6			- 1.50												
1.60-1.70	6													\vdash		
1.70-1.80 1.80-1.90	6 7			-										+		
1.90-2.00	5			- 2.00												
2.10-2.20	7															
2.20-2.30	9			-										\square		
2.40-2.50	14			-										+		
2.50-2.60	16			2.50 												
2.70-2.80	20			- 				-								
2.80-2.90	25			-										\square		
				3.00										\vdash		
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Remarks				5.00								Scale approx)	Logg By	ed		
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												2960-0	ю. 6-23 П	PH3		
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Ground Investigations Ireland Ltd						Site Tinahask								Probe Number DPH31		
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	D) Client Hayes Higgins								Job Number 12960-06-23			
	eight Song	Location	Dates 02/0	08/2023	Engineer									Sheet 1/1		
Depth (m)	Blows for Depth Incremen	t Field Records	Level (mOD)	Depth (m)	0	24 2	27	30								
0.00-0.10	1			0.00										+		
0.10-0.20	1			-										+		
0.30-0.40	2			 												
0.40-0.50 0.50-0.60	22		-	0.50												
0.60-0.70	3			-										+		
0.70-0.80 0.80-0.90	23			-										+-		
0.90-1.00 1.00-1.10	3 3			 1.00										+		
1.10-1.20	3			-												
1.20-1.30 1.30-1.40	3 4			-												
1.40-1.50	4			 										+		
1.60-1.70	5			- 										+		
1.70-1.80 1.80-1.90	4			-										+		
1.90-2.00	5			-												
2.00-2.10	5			2.00 												
2.20-2.30	6			-										+		
2.30-2.40	8		-	-										<u> </u>		
2.50-2.60	9			2.50				_								
2.70-2.80	14			- 												
2.80-2.90	16		-	 - 												
3.00-3.10	19			3.00				_						+		
3.10-3.20	20			-										_		
3.30-3.40	23		-	-												
				3.50												
			-	-										+		
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											1	2960-0	6-23.C)PH31		

Ground Investigations Ireland Ltd						Site Tinahask								Probe Number DPH32	
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	Ground Level (mOD) Client Hayes Higgins										Job Num i 12960-'	ber 06-23
nammer wo	eight song	Location	Dates 03/0	Engineer									Sheet 1/1		
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	0	2 (Blows	for De	pth Inc	rement	t	24		20	
0.00-0.10	0			0.00				9							
0.10-0.20	0			-											
0.20-0.30 0.30-0.40	1 3			-											
0.40-0.50	2														+
0.60-0.70	2														+
0.70-0.80 0.80-0.90	3			-											-
0.90-1.00	4			- - - 1.00											
1.10-1.20	5														
1.20-1.30 1.30-1.40	4			-											<u> </u>
1.40-1.50	5			- 1.50											+
1.60-1.70	5													<u> </u>	+
1.70-1.80 1.80-1.90	5														<u> </u>
1.90-2.00	6			- - - 2.00											
2.10-2.10	6														
2.20-2.30	6			-											+
2.40-2.50	6			- 0.50											+
2.50-2.60	6			— 2.50 											+
2.70-2.80	9			-											
2.90-3.00	8			- 											
3.00-3.10	12			3.00 					L						+
3.20-3.30	16			-											+
3.30-3.40 3.40-3.50	20			-									<u> </u>		+
				3.50											
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Remarks													Scale approx)	Logg By	ed
												-	1:25 Figure	J(No.	2
													12960-0	6-23.D	PH32

Ground Investigations Ireland Ltd						Site Tinahask									e ber 133	
Method Dynamic Pr Fall Height	obe DPH, 500mm	Cone Dimensions	Ground I	₋evel (mOD)	D) Client Hayes Higgins									Job Number 12960-06-23		
	eight Jong	Location	Dates 02/0	08/2023	Engineer									Sheet 1/1		
Depth (m)	Blows for Depth Increment	Field Records	Level (mOD)	Level Depth Blows for Depth Increment (mOD) 0 3 6 9 12 15 18 21									24 2	27	30	
0.00-0.10	0			0.00							-				F	
0.10-0.20	0														_	
0.20-0.30 0.30-0.40	0			-												
0.40-0.50 0.50-0.60	0			 												
0.60-0.70	2			-											-	
0.70-0.80 0.80-0.90	0 0			-												
0.90-1.00	2			 												
1.10-1.20	3			-												
1.20-1.30 1.30-1.40	3			-												
1.40-1.50	3			- - 1.50											-	
1.60-1.70	4														-	
1.70-1.80	4			-												
1.90-2.00	6		-	-												
2.00-2.10	6			2.00 												
2.20-2.30	7			-											+	
2.30-2.40	8			-											+-	
2.50-2.60	9			2.50												
2.80-2.70	13			- 												
2.80-2.90	13			-											-	
3.00-3.10	21			3.00											+	
3.10-3.20	21			-											_	
0.20-0.00	23			-												
				3.50												
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Remarks	1	1											Scale approx)	Logg By	ed	
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