

29th July 2022

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Dear Guy

Storthes Hall, Kirkburton - preliminary findings

Further to completion of the recent fieldwork at the above site please find enclosed a summary of our preliminary findings.

The site can be split into 3 separate areas, based on site features and usage, as shown on Drawing 4473/2 which is appended to this document.

- **Area A** – (c. 33,000m²) open grassed field, derelict building, allotment and woodland (east)
- **Area B** – (c. 83,000m²) University of Huddersfield (DIGS) halls of residence buildings, Storthes Hall Park (The Venue), surrounding landscaped areas, tarmac access roads and car parks (centre)
- **Area C** – (c. 19,000m²) derelict and heavily overgrown land (far west)

To date, the following ground related abnormalities have been identified:

- **Made Ground Topsoil** (containing significant proportions of anthropogenic material) is present across grassed and planted landscaping in Areas B & C, over Made Ground. Strip and stockpile of the Made Ground Topsoil will be problematic due to its irregular distribution and the fact that the soil directly overlies made ground. Furthermore, this material includes undesirable near surface materials (bricks, glass, tarmac, metal fragments etc) which render the Made Ground Topsoil unlikely to be suitable for re-use in gardens and areas of POS.
- Significant **obstructions** (relict foundations, floor slabs etc.) were encountered in TPs 08, 10, 19 & 23 from between 0.6m and 1.6m depth; relict foundations and obstructions associated with former and existing buildings should be anticipated and will require grubbing up and chasing out during demolition and earthworks.
- Made Ground includes a moderate proportion of oversized materials (bricks, stone lintels etc) and may require crushing and screening prior to being re-used as an engineered fill.
- Deeper **made ground** than that encountered to date is likely to be present (notably in a former quarry and associated with any current/former cellars etc). Deep made ground may preclude the use of 'traditional' strip/trench footings. Beyond areas of deep made ground, natural ground is strong enough to support traditional strip/trench fill footings.
- Visual and olfactory evidence of **hydrocarbon contamination** (comprising a tar-like free product) was encountered in TPs 17 & 19 at 0.8m and 1.2m depth respectively. Hydrocarbon odours were also noted in WS16 between 0.3m and 0.8m depth. Given ground conditions, further contamination may be present and it would be prudent to allow for some treatment of contaminated soils.
- Given site **topography**, (average gradient of 1v:18h, but locally 1v:3.5h) some regrade of levels is anticipated; subject to final proposals there may be a need for localised underbuild, tanking and/or retaining structures.



- Sources of hazardous ground **gas** have been identified and monitoring is underway.

Ground related abnormalities are broadly restricted to the centre and west of the site (Areas B & C – occupied by existing & former buildings); the east (Area A) is essentially greenfield.

Soakaway tests undertaken in 5 trial pits in Area A gave favourable results and soakaways should provide a means of surface water disposal. However, soakaway testing in Area C gave variable results; likely due to the localised presence and/or absence of joints and fractures within bedrock.

Soakaways should not be placed within made ground or in areas where contamination has been encountered (likely much of Areas B & C).

Laboratory analysis is now underway, and we expect to issue our final Geoenvironmental Appraisal Report by late August 2022.

Should you require any further information, please contact the undersigned.

Yours sincerely

James Brown
Senior Engineer
for and on behalf of
LITHOS CONSULTING LIMITED

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Preliminary Summary of Geoenvironmental Issues
Drawing 4473/1 – Site Location
Drawing 4473/2 – Site Areas
Drawing 4473/6 – Exploratory Hole Location Plan
Exploratory Hole Records
Soakaway Test Results

These findings may be revised in the light of laboratory testing, and during the more rigorous review of field data that will be undertaken prior to issue of our comprehensive report.

Proposed development

We understand that your proposed development will include traditional 2 & 3 storey domestic dwellings, with associated gardens and adoptable roads and sewers; to date no layout has been made available.

Preliminary investigation

Issue	Remarks
The site	5.3km southeast of Huddersfield town centre 13.5 ha (33.4 acres) The site comprises: • an open field in the east (Area A – 3.3 ha) • university accommodation campus with landscaped areas and car parks in the centre (Area B – 8.3 ha) and • derelict and overgrown land in the far southwest (Area C - 1.9 ha) Significant parts of the site are occupied by mature woodland which may pose a development constraint.
Former uses	A small quarry (c. 300m²) was located on the southern boundary in 1893. The site and land to the southwest was developed with Storthes Hall Hospital (lunatic asylum) around 1906; demolished in the mid-1990s and replaced with university accommodation buildings.
Environmental setting	Drift soils – None recorded. Solid (bedrock) – Grenoside Sandstone (part of Lower Coal Measures). Shallowest coal seam – 36-yard at about 160m depth; the site lies within a CA Development Low Risk Area. The nearest watercourse is Range Dike c. 200m to the north. Bedrock is a Secondary A Aquifer. There are no known landfills within 250m. However, there are numerous former sandstone quarries within 250m, with one quarry located on site adjacent to the southern boundary. The site lies within an area where between 1% and 3% of homes are estimated to be above the action level.

Ground investigation.

Fieldwork was supervised by Lithos between 19th July and 22nd July 2022 and comprised the exploratory holes listed below:

Technique	Exploratory holes	Final depth(s)	Remarks
Trial pitting (machine dug)	TPs 01 to 24	0.4m to 3.1m	Trial pits 08, 10, 19 & 23 terminated on obstructions in made ground. All other trial pits terminated within weathered bedrock.
Including soakaway tests	TPs 01 to 05, 9, 12 & 13	1.2m to 2.3m	Testing gave favourable infiltration rates.
Window sample boreholes	WSs 1 to 29	0.5m to 4.0m	Monitoring wells installed in 13 WSs. All window sample boreholes refused in bedrock.

Fieldwork findings are summarised below:

Issue	Remarks
Access restrictions	Throughout Lithos' works much of the site remained in use as campus accommodation and a wedding/events venue. No access was available inside any of the existing buildings. Consequently, trial pits were limited to Areas A & C and the peripheries of Area B. Window sampling was the only practical means of investigation across much of Area B. It should be noted that trenching to locate highwalls associated with a former sandstone quarry in the south has not been possible due to ongoing site usage.
Made ground	Made Ground was encountered in every hole within Areas B & C, average thickness of 0.8m; maximum of 2.1m (WS25) and comprised the following: • Tarmac Hardstand – Encountered at surface in 10 exploratory holes (c. 200mm thick) locally completely weathered to a black Gravel of tarmac • Concrete Hardstand – Encountered in 5 exploratory, at surface in TPs 15 & 22 (c. 200mm thick) and at depth in TPs 8, 10 & 23 (between 0.6m and 1.6m). The concrete at depth is likely to comprise relict floor slabs relating to former hospital buildings. • Made Ground Topsoil – Encountered in 26 exploratory holes near-surface (c. 250mm thick) in Areas B & C comprising dark brown silty Sands with gravels of sandstone, brick, concrete, coal & tarmac • Sub-Base – Encountered in 5 exploratory holes (c. 200mm thick) beneath tarmac in car parks and access roads comprising light brown subangular Gravels of limestone. • Granular Made Ground – Encountered in 33 exploratory holes to an average depth of 0.8m comprising black, dark grey, brown very gravelly Sands and sandy Gravels and Cobbles of brick, sandstone, concrete, tarmac, coal. Fragments of metal, wire, plastic, and glass were all encountered within Made Ground. • Cohesive Made Ground – Encountered in 6 exploratory holes to an average depth of 1.0m comprising dark brown and orangish brown slightly Sandy Clays with gravels of sandstone, coal, concrete, and ceramic. • Reworked Natural Ground – Encountered in 3 exploratory holes to an average depth of 0.8m comprising light brown very sandy subangular Gravel and Cobbles of sandstone.
Natural ground	Topsoil (typically 300mm in thickness) was encountered in Area A. Relict Topsoil was encountered in 10 exploratory holes beneath Made Ground in Area B to an average depth of 1.0m (average 0.2m thick) comprising dark brown slightly sandy Clays and Silts with gravels of sandstone. Natural soils encountered beneath all areas comprise: • Cohesive Residual Soil – Encountered in 10 exploratory holes in Area B (generally as thin layers) within Granular Residual Soils to an average depth of 1.9m. Comprising orangish brown and light brown, sandy Silts and Clays with gravels of sandstone. • Granular Residual Soil – Encountered in 34 exploratory holes beneath made ground and topsoil comprising light brown and orangish brown, gravelly Sands grading into sandy Gravels and Cobbles of sandstone to an average depth of 1.6m (maximum 3.5m). • Grenoside Sandstone bedrock – Encountered in 43 exploratory holes comprising weak to medium strong, light yellowish brown, fine and medium Sandstone recovered as sandy gravelly cobbles and boulders from an average depth of 1.5m. Average penetration with an 8-ton wheeled excavator and window sample rig into bedrock was 0.5m.
Obstructions	Obstructions (relating to former buildings/structures) were encountered in 6 exploratory holes in Areas B & C between 0.3m and 1.6m. Penetration of obstructions was not possible in TPs 8, 10, 19 & 23. It is apparent that significant obstructions remain in place beneath the footprint of former and existing buildings across much of the site's area.
Contamination	Visual\olfactory evidence of hydrocarbon contamination (tar substance) was encountered in TPs 17 & 19 at 0.8m and 0.7m to 1.2m depth respectively. Furthermore, hydrocarbon odours were observed in WS16 between 0.3m and 0.8m respectively. Samples of topsoil, made ground topsoil and made ground have been forwarded to the laboratory for analysis to determine its suitability for re-use and retention on site.
Remediation	Remediation works likely to comprise (but not limited to): • Demolition of existing buildings/structures (Area B) • Grubbing up of existing roads/hardstand (Areas B & C) • Turnover of made ground across Areas B & C with removal & screening of oversized & any areas of contamination • Excavation & crushing of below ground obstructions/relict foundations/slabs (Areas B & C) • Excavation & treatment/disposal of areas of hydrocarbon contamination (Area C) • Earthworks to form final development levels across the entire site (Areas B & C) • Provision of clean soil cover in garden areas – subject to chemical test results (Areas B & C) A Remediation Strategy & Materials Management Plan should be prepared.

Issue	Remarks
Foundations	The majority of plots at the site will be founded on traditional strip/trench fill foundations from around 1m; deepened where necessary due to made ground. The founding stratum will be Granular Residual Soils or Grenoside sandstone bedrock. No made ground exceeding 2.5m depth has been encountered. However, made ground could not be bottomed out in locations with significant obstructions. Alternative founding solutions (such as piles/vibro etc.) may be required where depths of made ground and/or fill exceed 2.5m depth or if made ground is considered too unstable to allow trench construction.
Groundwater & excavations	Groundwater was not encountered in any of the exploratory holes Shallow excavations into natural ground are likely to encounter some overbreak of sidewalls in residual soils. The stability of excavations into made ground was very poor and an allowance should be made for shoring.
Drainage	Soakaway testing was carried out within 8 trial pits in Areas A & C. Infiltration rates varied between in Area A between 2.77×10^{-3} and 3.51×10^{-4} m/s. Infiltration rates in Area C were more variable; between 2.23×10^{-3} and 2.20×10^{-5} m/s (with some tests unsuccessful due to insufficient drainage). Drainage Engineers could use these infiltration rates to determine the feasibility of soakaways as a solution for the discharge of surface water run-off.
Development constraints	Land falls to the northwest with a typical gradient of c. 1v:18h, but locally with slopes of up to c. 1v:3.5h and there may be a need for some levels regrade, underbuild etc. A former sandstone quarry is located in the south, and there will be an associated localised area of deeper made ground and quarry highwalls. Deep made ground may require alternative foundations and plots should not be positioned spanning highwalls wherever possible. Significant services (adoptable sewers and substations) are present throughout site, and these will either need to be decommissioned or incorporated into the proposed development layout.

Further works required as a result of initial site investigation:

- Post demolition site investigation – trial pitting and trenching across Areas B & C which were currently inaccessible due to ongoing uses to identify depths of made ground, significance of obstructions and allow refinement of foundation recommendations.
- Production of a Remediation Strategy & Materials Management Plan.

STORTHES HALL, KIRKBURTON - SUMMARY OF FINDINGS TO DATE



Area	Hole	Final depth (mbgl)	Depth to Base of Made Ground (mbgl)	Depth to Base of: (mbgl)										Depth to bedrock (mgl)	Penetration (m)	Remarks
				Made Ground						Natural Soils						
				Tarmac/ Concrete Hardstand	Sub-Base	Made Ground Topsoil	Granular Made Ground	Cohesive Made Ground	Reworked Natural Ground	Topsoil	Relict Topsoil	Cohesive Residual Soil	Granular Residual Soil			
Area A	TP01	1.3	-	-	-	-	-	-	-	0.4	-	-	1.3	1.3	-	Refusal on bedrock at 1.3m
	TP02	1.9	-	-	-	-	-	-	-	0.3	-	-	1.7	1.7	0.2	Refusal on bedrock at 1.9m
	TP03	1.9	-	-	-	-	-	-	-	0.2	-	-	1.5	1.5	0.4	Refusal on bedrock at 1.9m
	TP04	1.5	-	-	-	-	-	-	-	0.3	-	-	1.0	1.0	0.5	Refusal on bedrock at 1.5m
	TP05	1.2	-	-	-	-	-	-	-	0.3	-	-	0.9	0.9	0.3	Refusal on bedrock at 1.2m
	WS01	1.7	-	-	-	-	-	-	-	0.3	-	-	1.6	1.6	0.1	Refusal on bedrock at 1.7m
	WS02	2.5	-	-	-	-	-	-	-	0.4	-	-	2.0	2.0	0.5	Refusal on bedrock at 2.0m
	WS03	1.4	-	-	-	-	-	-	-	0.3	-	-	0.8	1.4	0.6	Refusal on bedrock at 1.4m
Area B	TP06	1.7	0.5	-	-	-	0.5	-	-	-	-	-	1.4	1.4	0.3	Refusal on bedrock at 1.7m
	TP07	3.1	1.4	-	-	0.2	0.7	-	1.4	-	1.6	-	>3.1	-	-	Difficult to excavate from 2.8m
	TP08	0.6	>0.6	>0.6	-	-	0.6	-	-	-	-	-	-	-	-	Concrete obstruction - 0.6m
	TP14	1.7	0.6	-	-	0.2	0.6	-	-	-	0.8	-	>1.7	-	-	-
	WS04	3.0	0.5	-	-	0.5	-	-	-	-	0.7	-	2.9	2.9	0.1	Refusal on bedrock at 3.0m
	WS05	2.5	0.6	0.2	0.4	-	0.6	-	-	-	0.6	-	2.0	2.0	0.5	Refusal on bedrock at 2.5m
	WS06	1.8	0.8	0.2	0.4	-	0.8	-	-	-	-	-	-	0.8	1.0	Refusal on bedrock at 1.8m
	WS07	4.0	0.2	-	-	0.2	-	-	-	-	-	1.6 & 2.6	1.4, 2.4 & 3.2	3.2	0.8	Refusal on bedrock at 4.0m
	WS08	1.5	0.6	-	-	0.2	-	0.6	0.4	-	-	1.2	1.1	1.2	0.3	Refusal on bedrock at 1.5m
	WS09	3.7	1.0	-	-	0.6	-	1.0	0.8	-	-	2.7	1.7 & 3.5	3.5	0.2	Refusal on bedrock at 3.7m
	WS10	2.5	1.0	-	-	0.1	0.8	0.5 & 1.0	-	-	-	1.3	1.6	1.6	0.9	Refusal on bedrock at 2.5m
	WS11	4.0	1.9	0.2	-	-	0.4	1.9	-	-	2.0	2.8	-	2.8	1.2	Refusal on bedrock at 4.0m
	WS13	2.6	0.6	-	-	0.2	0.6	-	-	-	0.8	1.9	-	1.9	0.7	Refusal on bedrock at 2.6m
	WS14	1.7	0.3	0.2	0.3	-	-	-	-	-	0.4	0.6	0.9	0.9	0.8	Refusal on bedrock at 1.7m
	WS15	1.7	0.8	0.2	-	-	0.8	-	-	-	-	-	1.4	1.4	0.3	Refusal on bedrock at 1.7m
	WS16	2.5	0.8	0.1	0.3	-	0.8	-	-	-	-	1.2 & 2.4	1.7	2.4	0.1	Refusal on bedrock at 2.5m
	WS17	0.6	0.3	-	-	0.3	-	-	-	-	-	-	-	0.3	0.3	Refusal on bedrock at 0.6m
	WS18	0.7	0.4	0.2	0.3	-	0.4	-	-	-	-	-	0.5	0.5	0.2	Refusal on bedrock at 0.7m
	WS19	2.1	0.5	-	-	0.2	0.5	-	-	-	-	-	1.4	1.4	0.7	Refusal on bedrock at 2.1m
	WS20	0.5	0.4	-	-	0.2	0.4	-	-	-	-	-	-	0.4	0.1	Refusal on bedrock at 0.5m
	WS21	1.0	0.8	-	-	0.4	0.8	-	-	-	-	-	-	0.8	0.2	Refusal on bedrock at 1.0m

STORTHES HALL, KIRKBURTON - SUMMARY OF FINDINGS TO DATE



Area	Hole	Final depth (mbgl)	Depth to Base of Made Ground (mbgl)	Depth to Base of: (mbgl)										Depth to bedrock (mgl)	Penetration (m)	Remarks
				Made Ground						Natural Soils						
				Tarmac/ Concrete Hardstand	Sub-Base	Made Ground Topsoil	Granular Made Ground	Cohesive Made Ground	Reworked Natural Ground	Topsoil	Relict Topsoil	Cohesive Residual Soil	Granular Residual Soil			
Area B	WS22	1.8	1.2	-	-	0.1	1.2	0.3	-	-	-	-	-	0.8	1.0	Refusal on bedrock at 1.8m
	WS23	0.9	0.4	-	-	0.4	-	-	-	-	-	-	-	0.4	0.5	Refusal on bedrock at 0.9m
	WS24	0.8	0.6	-	-	0.3	0.6	-	-	-	-	-	-	0.6	0.2	Refusal on bedrock at 0.8m
	WS25	2.2	2.1	-	-	0.2	2.1	-	-	-	-	-	-	2.1	0.1	Refusal on bedrock at 2.2m
	WS26	1.2	0.6	-	-	0.3	0.6	-	-	-	-	-	-	0.6	0.6	Refusal on bedrock at 1.2m
	WS27	2.0	0.6	-	-	0.2	0.6	-	-	-	0.9	1.5	-	1.5	0.5	Refusal on bedrock at 2.0m
	WS28	1.7	0.7	-	-	0.3	0.7	-	-	-	0.8	-	1.6	1.6	0.1	Refusal on bedrock at 1.7m
	WS29	2.0	0.8	-	-	0.1	0.6	0.8	-	-	1.0	1.8	-	1.8	0.2	Refusal on bedrock at 2.0m
Area C	TP09	1.8	0.3	-	-	-	0.3	-	-	-	-	-	1.3	1.3	0.5	Refusal on bedrock at 1.8m
	TP10	1.3	>1.3	>1.3	-	-	1.2	-	-	-	-	-	-	-	-	Concrete obstruction across base of the pit.
	TP11	1.2	0.8	-	-	-	0.8	-	-	-	-	-	0.8	0.8	0.4	Refusal on bedrock at 1.2m
	TP12	2.1	0.2	-	-	0.2	-	-	-	-	-	-	1.5	1.5	0.6	Refusal on bedrock at 2.1m
	TP13	2.3	0.6	0.2	-	0.1	0.6	-	-	-	-	-	2.2	2.2	0.1	Refusal on bedrock at 2.3m
	TP15	1.3	0.3	0.3	-	-	0.1	-	-	-	-	-	1.0	1.0	1.3	Refusal on bedrock at 1.3m
	TP16	2.0	1.3	-	-	0.2	1.3	-	-	-	-	-	>2.0	-	-	Difficult to excavate from 1.9m
	TP17	2.0	1.1	-	-	0.3	1.1	-	-	-	-	-	1.8	1.8	0.2	Refusal on bedrock at 2.0m
	TP18	2.0	2.0	0.3	-	0.1	-	-	-	-	-	-	>2.0	-	-	Sandstone 0.3m to 0.6m
	TP19	1.3	>1.3	-	-	-	>1.3	-	-	-	-	-	-	-	-	Concrete obstruction across base of the pit at 1.3m
	TP20	2.1	1.2	-	-	-	1.2	-	-	-	-	-	2.0	2.0	0.1	Refusal on bedrock at 2.1m
	TP21	1.5	0.3	0.3	-	-	-	-	-	-	-	-	1.0	1.0	0.5	Sandstone 0.3m to 0.5m. Refusal on bedrock at 1.5m
	TP22	0.4	>0.4	0.2	-	-	>0.4	-	-	-	-	-	-	-	-	300mm drain uncovered. Excavation abandoned.
	TP23	1.7	>1.7	>1.7	-	-	1.6	-	-	-	-	-	-	-	-	Concrete obstruction across base of the pit at 1.7m
	TP24	1.0	0.5	-	-	0.2	0.5	-	-	-	-	-	0.7	0.7	0.3	Refusal on bedrock at 1.0m
	WS12	2.2	0.3	0.05 & 0.15	-	-	0.3	-	-	-	-	-	1.0	0.5	1.0	1.2



**The Site
SE 180 127**

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CLIENT

**UBRIQUE
INVESTMENTS
LIMITED**

JOB TITLE

**STORTHES HALL,
KIRKBURTON**

DRAWING TITLE

**SITE LOCATION
PLAN**

DRAWN

JBR

DATE

13/07/2022

CHECKED

GLM

DATE

13/07/2022

STATUS

FOR COMMENT ☐

DRAFT ☐

FOR APPROVAL ☐

FINAL ☒

SCALE

1:25,000

SHEET

A4

DRAWING NO.

4473/1

REVISION



NOTES		
	WOODLAND	
	GRASS & OVERGROWN AREAS	
	BUILDING	
	TARMAC HARDSTAND	
	BLOCK SURFACING & CONCRETE HARDSTAND	
	APPROXIMATE SITE BOUNDARY	
	APPROXIMATE AREA BOUNDARY	
REV.	DESCRIPTION	DATE



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CLIENT

UBRIQUE INVESTMENTS LIMITED

JOB TITLE

STORTHES HALL, KIRKBURTON

DRAWING TITLE

SITE AREAS

DRAWN	JBR	DATE	13/07/2022	STATUS	FOR COMMENT ☐
CHECKED	GLM	DATE	13/07/2022	FOR APPROVAL	☐
				DRAFT	☐
				FINAL	☒
SCALE	1:2,000	SHEET	A3	DRAWING NO.	4473/2
				REVISION	



NOTES

- GRASS & OVERGROWN AREAS
- BUILDING
- TARMAC HARDSTAND
- BLOCK SURFACING & CONCRETE HARDSTAND
- HISTORICAL (FUEL) STORAGE TANKS
- TRIAL PIT LOCATION
- SOAKAWAY PIT LOCATION
- WINDOW SAMPLE LOCATION
- APPROXIMATE SITE BOUNDARY

EXPLORATORY HOLE LOCATIONS BASED ON DATA FROM A HAND-HELD GPS (+/- 3M ACCURACY)

REV.	DESCRIPTION	DATE

LITHOS CONSULTING

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Tel 01937 545330

CLIENT

UBRIQUE INVESTMENTS LIMITED

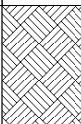
JOB TITLE

STORTHESS HALL, KIRKBURTON

DRAWING TITLE

EXPLORATORY HOLE LOCATIONS

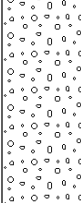
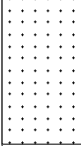
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CHECKED	GLM	DATE	25/07/2022				
SCALE	1:2,000	SHEET	A3	DRAWING NO.	4473/6	REVISION	

				Trial Pit Log			Trialpit No TP01 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418283.00 - 412836.00 Level:		Date 19/07/2022	
Location: Kirkburton				Dimensions (m):		2.08		Scale 1:25	
Client: Ubrique Investments				Depth 1.30				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	J&T		0.40			Dark brown slightly gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone. (TOPSOIL)		
	0.20	B					Light brown angular to subangular tabular COBBLES of sandstone with much fine to coarse sand and angular to subangular fine to coarse gravel. (GRANULAR RESIDUAL SOIL) <i>At 0.45m, metal bucket buried in topsoil.</i>		
	1.10	T					Weak to medium strong light brown fine to medium grained SANDSTONE. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 1.3m, refusal on weak to medium strong light brown fine to medium SANDSTONE.</i> <i>At 1.3m, soakaway test undertaken.</i> End of pit at 1.30 m		
				1.20					
				1.30					
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable due to overbreak of the sidewalls in Granular Residual Soil.									

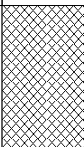
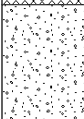
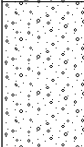


				Trial Pit Log			Trialpit No TP03 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418315.00 - 412831.00 Level:		Date 19/07/2022	
Location: Kirkburton				Dimensions (m):		2.12		Scale 1:25	
Client: Ubrique Investments				Depth 1.90				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	J&T		0.20			Dark brown gravelly slightly silty fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of sandstone. (TOPSOIL)		
	0.20	B							
				0.60			Light brown very sandy angular and subangular fine to coarse GRAVEL of sandstone with a high tabular sandstone cobble content. (GRANULAR RESIDUAL SOIL)		
	0.80	T		1.10			Orangish brown very silty fine to medium SAND. (GRANULAR RESIDUAL SOIL)	1	
				1.50			Light brown angular to subangular fine to coarse COBBLES of sandstone with much fine to coarse sand and angular to subangular fine to coarse gravel. (GRANULAR RESIDUAL SOIL)		
				1.90			Weak light yellowish brown fine to medium grained SANDSTONE. Recovered as sandy gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES)		
							At 1.9m, refusal on bedrock. At 1.9m, soakaway test undertaken. End of pit at 1.90 m	2	
								3	
								4	
								5	
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable due to overbreak of the sidewalls in Granular Residual Soil.									



				Trial Pit Log			Trialpit No TP04 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418376.00 - 412860.00 Level:		Date 19/07/2022	
Location: Kirkburton				Dimensions (m):		2.04		Scale 1:25	
Client: Ubrique Investments				Depth 1.50				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	J&T		0.30			MADE GROUND: Dark brown gravelly slightly silty fine to coarse SAND. Gravel is angular to subrounded fine to coarse of sandstone and clinker. (MADE GROUND TOPSOIL)		
							Light brown angular to subangular tabular COBBLES of sandstone with much fine to coarse sand and angular and subangular gravel. (GRANULAR RESIDUAL SOIL)		
	0.90	T		1.00			Weak to medium strong light yellowish brown fine to medium grained SANDSTONE. Recovered as tabular angular and subangular fine to coarse gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES)		
				1.50			At 1.5m, refusal on bedrock. At 1.5m, soakaway test undertaken. End of pit at 1.50 m		
1 2 3 4 5									
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable due to overbreak of the sidewalls in Granular Residual Soil.									

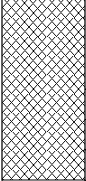


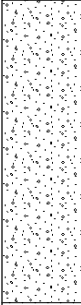
				Trial Pit Log			Trialpit No TP06 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418191.00 - 412828.00 Level:		Date 19/07/2022	
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25	
Client: Ubrique Investments				Depth 1.70				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.30	J&T		0.50			MADE GROUND: Layer of turf (0.05m thick) over dark brown very gravelly silty fine to coarse SAND. Gravel is angular to subrounded fine to medium of sandstone, concrete, limestone, brick and coal. Rare coarse gravel and cobble sized fragments of glass and plastic (GRANULAR MADE GROUND)		
				0.90			Brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)		
	1.20	T		1.40			Light yellowish brown very sandy angular to subangular fine to coarse GRAVEL of sandstone with a low subangular sandstone cobble content. (GRANULAR RESIDUAL SOIL)		
	1.50	T		1.70			Weak to medium strong yellowish brown fine to medium grained SANDSTONE. Recovered as cobbles and gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)		
	At 1.7m, refusal on bedrock.							End of pit at 1.70 m	
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable due to overbreak of the sidewalls in Granular Residual Soil.									



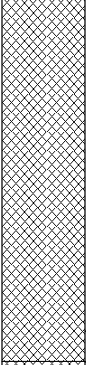
				Trial Pit Log				Trialpit No TP07 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418065.00 - 412644.00 Level:		Date 19/07/2022	
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25	
Client: Ubrique Investments				Depth 3.10				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	J&T		0.20			MADE GROUND: Dark brown slightly sandy slightly gravelly clayey SILT. Gravel is angular to subangular fine to coarse of brick. (MADE GROUND TOPSOIL)		
	0.50	J&T		0.70			MADE GROUND: Brown and dark brown gravelly clayey fine to coarse SAND. Gravel is angular to subangular fine to coarse brick, sandstone, concrete and coal. Rare gravel sized wood fragments. (GRANULAR MADE GROUND)		
	1.30	T		1.40			MADE GROUND: Light brown angular to subangular COBBLES of sandstone with a low sandstone boulder content and much silty fine to coarse sand and angular tabular gravel. (REWORKED NATURAL GROUND)		
	2.90	T		1.60			Dark brown slightly gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone. (RELICT TOPSOIL)		
				2.20			Brown gravelly silty fine to medium SAND. Gravel is angular to subangular fine to medium of sandstone. (GRANULAR RESIDUAL SOIL)		
				3.10			Yellowish brown very gravelly fine to coarse SAND with a medium sandstone angular cobble content. Gravel is angular to subangular fine to coarse sandstone. (GRANULAR RESIDUAL SOIL)		
At 2.8m, becoming difficult to excavate.							End of pit at 3.10 m		
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable between surface and 1.4m depth during excavation.									

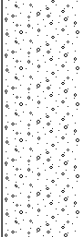
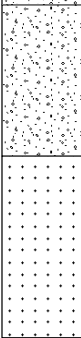


				Trial Pit Log			Trialpit No TP08 Sheet 1 of 1			
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417989.00 - 412831.00 Level:		Date 19/07/2022		
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25		
Client: Ubrique Investments				Depth 0.60				Logged JBr		
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
	Depth	Type	Results							
	0.30	J&T		0.60			MADE GROUND: Brown very sandy angular to subangular fine to coarse GRAVEL of sandstone, concrete and brick with a medium concrete and brick cobble content. (GRANULAR MADE GROUND) At 0.3m, concrete boulder, 0.6m wide. At 0.4m, concrete boulder, 0.3m wide. At 0.6m, concrete obstruction across entire pit. Unable to excavate further or move exploratory hole due to utilities. End of pit at 0.60 m			
	0.50	J&T								
									1	
									2	
									3	
									4	
									5	
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.										
Stability: 1. The sides of the trial pit were unstable between surface and 0.6m depth during excavation.										

				Trial Pit Log			Trialpit No TP09 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417974.00 - 412517.00 Level:		Date 20/07/2022	
Location: Kirkburton				Dimensions (m):		2.12		Scale 1:25	
Client: Ubrique Investments				Depth 1.80				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	J&T		0.30		 	MADE GROUND: Turf (0.05m thick) over dark brown very sandy silty fine to coarse angular to subangular GRAVEL of sandstone, limestone, tarmac, concrete and coal. (GRANULAR MADE GROUND)		
	1.00	T					Light orangish brown very gravelly fine to coarse SAND with a low angular and subangular sandstone cobble and boulder content. Gravel is subangular to subrounded fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)		
							Weak to medium strong light yellowish brown fine to medium grained SANDSTONE. Recovered as very sandy gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES)		
							At 1.8m, refusal on sandstone bedrock. At 1.8m, soakaway test undertaken. End of pit at 1.80 m		
1 2 3 4 5									
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit remained stable during excavation.									



				Trial Pit Log				Trialpit No TP10 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417942.00 - 412581.00 Level:		Date 20/07/2022		
Location: Kirkburton				Dimensions (m): Depth 1.30		2.2		Scale 1:25		
Client: Ubrique Investments						0.6		Logged JBr		
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
	Depth	Type	Results							
	0.30	J&T					MADE GROUND: Turf (0.05m thick) over light grey and reddish brown COBBLES of bricks, half bricks & concrete with much fine to coarse sand and angular and subangular fine to coarse gravel. Rare fragments of coarse gravel to boulder sized metal sheeting, glass and fabric and wire. (GRANULAR MADE GROUND)			
	0.80	J&T								
				1.20			At 1.2m, concrete obstruction across the base of the pit. Hydraulic breaker unable to break through slab.			
				1.30			MADE GROUND: Light grey concrete HARDSTAND. (CONCRETE HARDSTAND)			
							End of pit at 1.30 m			
Remarks:				1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.						
Stability:				1. The sides of the trial pit were unstable between surface and 1.20m depth during excavation.						

				Trial Pit Log			Trialpit No TP12 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417897.00 - 412637.00 Level:		Date 20/07/2022	
Location: Kirkburton				Dimensions (m):		2.21		Scale 1:25	
Client: Ubrique Investments				Depth 2.10				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10 0.10	B J&T		0.20			MADE GROUND: Dark brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone, concrete and limestone. Rare fragments of coarse gravel sized metal, glass and pottery. Sand is occasionally ashy. (MADE GROUND TOPSOIL)		
	0.80	T		1.00			Light orangish brown very sandy angular to subangular fine to coarse GRAVEL of sandstone with a low subangular sandstone cobble content. (GRANULAR RESIDUAL SOIL)		
	1.70	T		1.50			Brown gravelly clayey fine to coarse SAND. Gravel is subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)		
				2.10			Weak brown and light yellowish brown fine to medium grained SANDSTONE. Recovered as sand, gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES)		
							At 2.1m, refusal on bedrock. At 2.1m, soakaway test undertaken. End of pit at 2.10 m		
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit remained stable during excavation.									

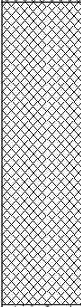
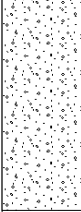


LITHOS CONSULTING				Trial Pit Log			Trialpit No TP13 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417966.00 - 412616.00		Date 20/07/2022
Location: Kirkburton				Dimensions (m):		2.04		Scale 1:25
Client: Ubrique Investments				Depth 2.30		0.6		Logged JBr
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.15	J&T		0.10			MADE GROUND: Dark brown slightly gravelly fine to medium SAND. Gravel is angular to subangular fine to medium of coal and tarmac. (MADE GROUND TOPSOIL)	
	0.40	J&T		0.20				
				0.60			MADE GROUND: Dark brown very gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to medium of coal and tarmac. (GRANULAR MADE GROUND) <i>At 0.2m, stone lintel (0.5m wide) in Trial Pit wall.</i>	1
				1.50			Orangish brown gravelly fine to coarse SAND. Gravel is angular to subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)	2
	2.00	T		2.20			Weak light yellowish brown fine to medium grained SANDSTONE. Recovered as sandy gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 2.3m, refusal on bedrock.</i>	3
				2.30				
						End of pit at 2.30 m		

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.
Stability: 1. The sides of the trial pit were unstable between surface and 0.6m depth during excavation.

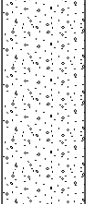
				Trial Pit Log			Trialpit No TP15 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417970.00 - 412535.00 Level:		Date 20/07/2022	
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25	
Client: Ubrique Investments				Depth 1.30				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.05	J&T		0.10			MADE GROUND: Light grey sandy angular to subangular fine to coarse GRAVEL of limestone, sandstone and concrete. (GRANULAR MADE GROUND)		
				0.30			MADE GROUND: Strong light grey concrete HARDSTAND. (CONCRETE HARDSTAND) <i>At 0.15m, hydraulic breaker used to break-out concrete.</i>		
	0.80	T		1.00			Orangish brown gravelly fine to coarse SAND with a low sandstone cobble content. Gravel is angular to subangular fine to coarse sandstone. (GRANULAR RESIDUAL SOIL)	1	
				1.30			Weak to medium strong light yellowish brown fine to medium grained SANDSTONE. Recovered as sandy gravelly cobbles and boulders. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 1.3m, refusal on bedrock.</i> End of pit at 1.30 m	2	
								3	
								4	
								5	
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable due to overbreak of the sidewalls in Granular Residual Soil.									



				Trial Pit Log			Trialpit No TP16 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417869.00 - 412633.00 Level:		Date 20/07/2022	
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25	
Client: Ubrique Investments				Depth 2.00				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20	J&T		0.30			MADE GROUND: Dark brown gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse sandstone. Rare fragments of coarse gravel sized glass and plastic. (MADE GROUND TOPSOIL)		
	1.40	T		1.30			MADE GROUND: Brown very sandy angular to subangular fine to coarse GRAVEL of sandstone, concrete and brick with a medium subangular sandstone cobble content. (GRANULAR MADE GROUND)		
				2.00			(GRANULAR RESIDUAL SOIL) At 1.9m, becoming difficult to excavate. End of pit at 2.00 m		
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable between surface and 1.3m depth during excavation.									



				Trial Pit Log			Trialpit No TP17 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417907.00 - 412660.00 Level:		Date 20/07/2022	
Location: Kirkburton				Dimensions (m):		2.2 		Scale 1:25	
Client: Ubrique Investments				Depth 2.00		0.6 		Logged JBr	

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	J&T		0.30		 MADE GROUND: Dark brown gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse sandstone and concrete. Rare fragments of fine and medium gravel sized glass. (MADE GROUND TOPSOIL)	1	
	0.50	J&T						
	0.80	J&K						
	1.00	J						
	1.30	J&K		1.10		 Orangish brown very gravelly fine to coarse SAND with a medium sandstone cobble content. Gravel is angular to subangular fine to coarse sandstone. (GRANULAR RESIDUAL SOIL)		
	1.90	J		1.80		 Weak orangish brown fine and medium grained SANDSTONE. Recovered as sandy gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES)	2	
				2.00		At 2.0m, refusal on bedrock. End of pit at 2.00 m		
							3	
							4	
							5	

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

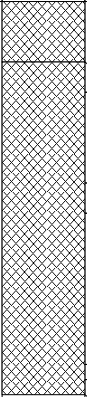
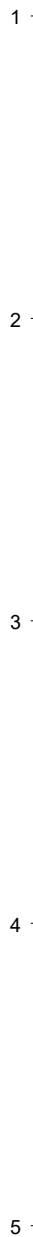
Stability: 1. The sides of the trial pit were unstable between surface and 1.1m depth during excavation.



LITHOS CONSULTING				Trial Pit Log			Trialpit No TP18 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417883.00 - 412600.00		Date 20/07/2022
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25
Client: Ubrique Investments				Depth 2.00		0.6		Logged JBr
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
	0.20	J&T		0.10			MADE GROUND: Dark brown gravelly fine to coarse SAND. Gravel is angular and subangular fine and medium of sandstone and tarmac. (MADE GROUND TOPSOIL)	1
				0.30			MADE GROUND: Weak black tarmac HARDSTAND. Recovered angular and subangular fine and medium gravel. (TARMAC HARDSTAND)	
	0.80	T		0.60			Weak to medium strong light yellowish brown fine and medium SANDSTONE. Recovered as cobbles and boulders. (GRANULAR RESIDUAL SOIL) <i>From 0.3m to 0.6m, very difficult to excavate.</i>	
				1.10			Orangish brown very gravelly fine to coarse SAND. Gravel is angular and subangular fine to coarse sandstone. (GRANULAR RESIDUAL SOIL) Light orangish brown very sandy angular and subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)	
	1.60	T		2.00			<i>From 1.8m, becoming difficult to excavate.</i>	
						End of pit at 2.00 m		2
								3
								4
								5

Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.

Stability: 1. The sides of the trial pit were unstable between surface and 0.6m depth during excavation.

				Trial Pit Log			Trialpit No TP19 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417937.00 - 412627.00 Level:		Date 21/07/2022	
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25	
Client: Ubrique Investments				Depth 1.30				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.10	J&T		0.20			MADE GROUND: Light grey and black fine to coarse ASH with a low subangular brick cobble content. (GRANULAR MADE GROUND)		
	0.50	J&T			MADE GROUND: Dark brown and black very sandy angular and subangular fine to coarse GRAVEL of brick, concrete, sandstone, tarmac and coal. Rare fragments of coarse gravel and cobble sized metal and plastic. (GRANULAR MADE GROUND)				
	0.70	J,K&T		1.30	<i>From 0.3m to 0.5m, significant metal rebar (150mm to 200mm diameter)</i> <i>From 0.6m to 0.8m, concrete obstruction in north wall.</i> <i>From 0.7m to 1.20m, black tar substance. Strong hydrocarbon odour.</i> <i>Sample taken.</i>				
							<i>From 1.2m, free product.</i> <i>At 1.3m, concrete obstruction across base of pit.</i> End of pit at 1.30 m		
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable between surface and 1.3m depth during excavation.									

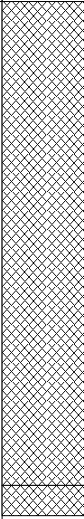


				Trial Pit Log			Trialpit No TP20 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417935.00 - 412623.00 Level:		Date 21/07/2022	
Location: Kirkburton				Dimensions (m):		2.2 0.6		Scale 1:25	
Client: Ubrique Investments				Depth 2.10				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.30			MADE GROUND: Light brown very gravelly fine to coarse SAND with a low subangular brick and concrete cobble content. Gravel is angular and subangular fine to coarse brick, sandstone, tarmac and concrete. (GRANULAR MADE GROUND)		
	0.60	J&T					MADE GROUND: Dark brown and black very sandy angular and subangular fine to coarse GRAVEL of coal, tarmac limestone and concrete. (GRANULAR MADE GROUND)		
	0.80	T				From 0.6m to 0.8m concrete obstruction running across the pit. Excavated through with machine.			
				1.20			Orangish brown very sandy angular and subangular COBBLES of sandstone with much subangular fine to coarse sand and fine to coarse gravel. (GRANULAR RESIDUAL SOIL)		
	1.90	T					Weak to medium strong orangish brown and light yellowish brown fine and medium grained SANDSTONE. Recovered as sandy angular fine to coarse gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES) At 2.1m, refusal on bedrock.		
			2.00 2.10			End of pit at 2.10 m			
1 2 3 4 5									
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable between surface and 1.2m depth during excavation.									



				Trial Pit Log			Trialpit No TP21 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417949.00 - 412655.00 Level:		Date 21/07/2022	
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25	
Client: Ubrique Investments				Depth 1.50				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.20	J&T		0.30			MADE GROUND: Very weak black tarmac HARDSTAND. Recovered as very sandy angular and subangular fine to coarse gravel. (TARMAC HARDSTAND)		
				0.50			At 0.2m, street lighting cable (redundant) in north wall. Weak light yellowish brown fine and medium grained SANDSTONE. Recovered as cobbles and boulders. (GRANULAR RESIDUAL SOIL)		
	0.90	T		1.00			From 0.3m to 0.5m, very difficult to excavate. Orangish brown very gravelly fine to coarse SAND. Gravel is angular and subangular fine to coarse sandstone. (GRANULAR RESIDUAL SOIL)	1	
				1.50			Weak light yellowish brown fine and medium grained SANDSTONE. Recovered as sandy angular and subangular fine to coarse gravel and cobbles. (GRENOSIDE SANDSTONE - COAL MEASURES)		
							At 1.5m, refusal on bedrock.	2	
							End of pit at 1.50 m		
								3	
								4	
								5	
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable between surface and 0.5m depth during excavation.									



				Trial Pit Log			Trialpit No TP23 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417957.00 - 412564.00 Level:		Date 21/07/2022	
Location: Kirkburton				Dimensions (m):		2.2		Scale 1:25	
Client: Ubrique Investments				Depth 1.70				Logged JBr	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
	0.70	J&T		1.60 1.70			MADE GROUND: Layer of turf (0.05m thick) over light brown and reddish brown COBBLES of brick, half brick, sandstone and concrete with much fine to coarse sand and angular and subangular fine to coarse gravel. Frequent fragments of cobble sized plastic, metal and wire. (GRANULAR MADE GROUND) At 1.4m, brick wall between 0.5m and 1.6m in western trial pit wall. At 1.0m, concrete boulder 0.8m wide. At 1.6m, concrete obstruction across the base of the pit. Unable to excavate through. MADE GROUND: Strong light grey concrete HARDSTAND. (CONCRETE HARDSTAND) End of pit at 1.70 m		
1 2 3 4 5									
Remarks: 1. Prior to excavation a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during excavation. 3. Backfilled with materials arising upon completion. 4. Co-ordinates from hand held GPS, hole not surveyed in.									
Stability: 1. The sides of the trial pit were unstable between surface and 1.6m depth during excavation.									

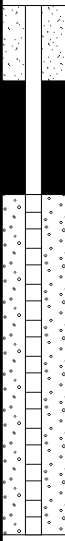
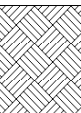
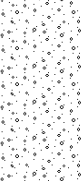
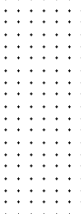


				Borehole Log				Borehole No. WS01 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418359.00 - 412839.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20			
Client: Ubrique Investments				Dates: 19/07/2022 - 19/07/2022		Logged By ET			
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.25		 Dark brown sandy slightly gravelly CLAY. Gravel is subangular tabular fine to coarse of sandstone. (TOPSOIL)		
					0.60		 Light brown sandy subangular tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					1.00		 Orangish brown gravelly SAND. Gravel is subangular fine to coarse sandstone, (GRANULAR RESIDUAL SOIL)		
					1.60		 Light brown sandy subangular tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					1.70		 Light brown SANDSTONE. Recovered as slightly sandy subangular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) At 1.7m, refused on bedrock. End of borehole at 1.70 m		
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									



LITHOS CONSULTING				Borehole Log				Borehole No. WS02 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418324.00 - 412860.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 19/07/2022 - 19/07/2022					
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40				
					1.70				1
					2.00				2
					2.50		<i>On completion hole collapse to 2.0m.</i> <i>At 2.5m, refused on bedrock.</i> End of borehole at 2.50 m		3
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									

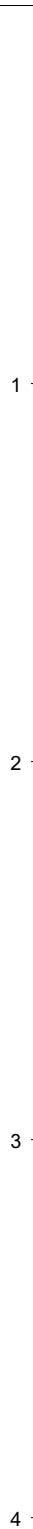


				Borehole Log			Borehole No. WS03 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418287.00 - 412819.00		Hole Type WS
Location: Kirkburton				Level:		Scale 1:20		
Client: Ubrique Investments				Dates: 19/07/2022 - 19/07/2022		Logged By ET		
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30		 Dark brown gravelly slightly clayey SAND. Gravel is subangular tabular fine to coarse of sandstone. (TOPSOIL)	
					0.80		 Orangish brown sandy subangular tabular coarse of GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)	
					1.40		 Light brown SANDSTONE. Recovered as slightly sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	
		At 1.4m, refused on bedrock.						
End of borehole at 1.40 m								
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.								



LITHOS CONSULTING				Borehole Log				Borehole No. WS04 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418050.00 - 412622.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 19/07/2022 - 19/07/2022					
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	J&T				MADE GROUND: Dark brown gravelly slightly clayey SAND. Gravel is angular fine to coarse of brick, tarmac and sandstone. (MADE GROUND TOPSOIL)		
		0.60	D		0.45		Dark brown sandy CLAY. (RELICT TOPSOIL)		
					0.70		Orangish brown clayey slightly gravelly SAND. Gravel is subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)		
					1.00		Light brown slightly sandy subangular tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)	1	
					1.30		Orangish brown gravelly slightly clayey SAND. Gravel is subangular tabular fine to coarse sandstone. (GRANULAR RESIDUAL SOIL)	2	
		2.50	D		2.90				
					3.00		Light brown SANDSTONE. Recovered as subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 3.0m, refused on bedrock.</i> End of borehole at 3.00 m	3	
								4	

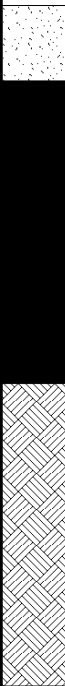
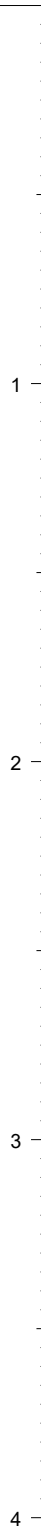
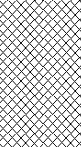
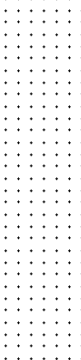
Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.

					Borehole Log			Borehole No. WS05 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 418017.00 - 412639.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		Logged By ET
Client: Ubrique Investments					Dates: 19/07/2022 - 19/07/2022				
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	T		0.19		MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)		
		0.30	J&T		0.40		MADE GROUND: Buff subangular fine to coarse GRAVEL of limestone. (SUB-BASE)		
		0.50	J&T		0.60		MADE GROUND: Reddish brown and black gravelly SAND. Gravel is angular fine to coarse of brick and tarmac. (GRANULAR MADE GROUND)		
					0.70		Dark brown sandy CLAY with rare decomposing rootlets. (RELICT TOPSOIL)		
							Orangish brown slightly clayey slightly gravelly SAND. Gravel is subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)		
		1.50	T		2.20		Light brown SANDSTONE. Recovered as sandy subangular fine to coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)		
					2.50		At 2.5m, refused on bedrock.		
End of borehole at 2.50 m									

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
 3. Co-ordinates from hand held GPS, hole not surveyed in.



					Borehole Log			Borehole No. WS06 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 417980.00 - 412662.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		Logged By ET
Client: Ubrique Investments					Dates: 19/07/2022 - 19/07/2022				
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	T		0.19			MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)	
		0.20	T		0.35			MADE GROUND: Light brown subangular fine to coarse GRAVEL of limestone. (SUB-BASE)	
		0.60	J&T		0.80			MADE GROUND: Multicoloured gravelly SAND. Gravel is angular fine to coarse of brick, tarmac, ceramic and glass. (GRANULAR MADE GROUND)	
		1.10	T		1.80			Light brown sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)	
								At 1.8m refused on bedrock.	
End of borehole at 1.80 m									
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									

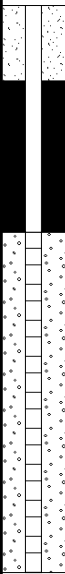
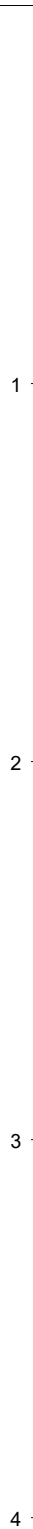


LITHOS CONSULTING					Borehole Log			Borehole No. WS07 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 418068.00 - 412686.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		Logged By ET
Client: Ubrique Investments					Dates: 19/07/2022 - 19/07/2022				
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.75	J		0.20		MADE GROUND: Dark brown sandy slightly gravelly SAND with many rootlets. Gravel is subangular fine to coarse of sandstone, brick and plastic. (MADE GROUND TOPSOIL)	1	
						MADE GROUND: Brown slightly gravelly SAND. Gravel is subangular fine to coarse of brick, sandstone and tarmac. (GRANULAR MADE GROUND)			
						Between 0.7m and 0.8m, gravel predominantly of tarmac.			
					1.40		Firm orange and brown mottled silty CLAY. (COHESIVE RESIDUAL SOIL)		
					1.60		Orangish brown sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					2.40		Firm brown silty slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)		
					2.60		Orangish brown sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					3.20		Light brown SANDSTONE. Recovered as slightly clayey sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)		
					4.00		At 4.0m, refused on bedrock.		

Remarks

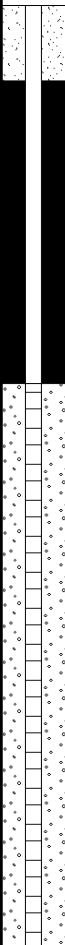
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
3. Co-ordinates from hand held GPS, hole not surveyed in.

AGS

				Borehole Log				Borehole No. WS08 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418060.00 - 412725.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 20/07/2022 - 20/07/2022					
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.20	J		0.20		 MADE GROUND: Dark brown gravelly slightly clayey SAND with occasional rootlets. Gravel is subangular tabular fine to coarse of sandstone. (MADE GROUND TOPSOIL)		
		0.40 - 0.60	J		0.40		 MADE GROUND: Light brown sandy subangular tabular fine to coarse GRAVEL of sandstone. (REWORKED NATURAL GROUND)		
					0.60		 MADE GROUND: Dark brown sandy slightly gravelly CLAY. Gravel is angular to subangular fine to coarse of sandstone, pottery, chert and coal. (RELICT TOPSOIL)		
		1.10 - 1.20	D		1.10		 Orangish brown sandy subangular tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
		1.30 - 1.50	T		1.20		 Firm orangish brown sandy slightly gravelly CLAY. Gravel is subangular tabular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)		
					1.50		 Light brown to orangish brown SANDSTONE. Recovered as sandy tabular gravel. (GRENOSE SANDSTONE - COAL MEASURES)		
At 1.5m, refused on bedrock. End of borehole at 1.50 m									
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									

LITHOS CONSULTING					Borehole Log			Borehole No. WS09 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 418104.00 - 412740.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		Logged By ET
Client: Ubrique Investments					Dates: 20/07/2022 - 20/07/2022				
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 - 0.50	J&T		0.10		MADE GROUND: Dark brown CLAY with occasional rootlets. (MADE GROUND TOPSOIL)	1	
					0.60		MADE GROUND: Dark brown gravelly SAND. Gravel is angular to subangular fine to coarse of limestone, sandstone and brick. With some gravel size fragments of metal and wood. (GRANULAR MADE GROUND)		
					0.80		MADE GROUND: Orangish brown clayey subangular fine to coarse GRAVEL of sandstone. (REWORKED NATURAL GROUND)		
		0.90	J		1.00		MADE GROUND: Dark brown sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone and coal. (RELICT TOPSOIL)		
					1.20		Orangish brown clayey subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					1.70		Orangish brown sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					2.70		Firm orangish brown slightly gravelly SILT. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)		
					3.50		Orangish brown clayey subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					3.70		At 3.5m, band of COAL.		
							Light brown SANDSTONE. Recovered as subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) At 3.7m, refused on bedrock. End of borehole at 3.70 m		4

Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.

				Borehole Log			Borehole No. WS10 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418121.00 - 412794.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 20/07/2022 - 20/07/2022					
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.50	J&T		0.10		MADE GROUND: Dark brown CLAY with occasional rootlets. (MADE GROUND TOPSOIL)		
					0.50		MADE GROUND: Dark brown gravelly slightly sandy CLAY. Gravel is subangular fine to coarse sandstone and concrete. Rare fragments of coarse gravel sized of fabric. (COHESIVE MADE GROUND)		
		0.80 - 1.00	J&T		0.80		MADE GROUND: 0.05m thick decorative paving slab underlain by loosely cemented angular GRAVEL of tarmac. (GRANULAR MADE GROUND)		
		1.00 - 1.30	D		1.00		MADE GROUND: Dark brown slightly gravelly SILT. Gravel is angular to subangular fine to coarse sandstone and ceramic. (RELICT TOPSOIL)	1	
					1.30		Firm orangish brown and brown mottled slightly sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)		
					1.60		Orangish brown slightly clayey slightly sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
		1.80 - 2.00	T		1.80		Light brown SANDSTONE. Recovered as slightly sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	2	
							Between 2.1m and 2.4m, pervasive orange brown iron staining.		
							At 2.5m, refused on bedrock.		
					2.50		End of borehole at 2.50 m	3	
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									

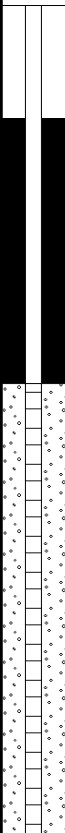
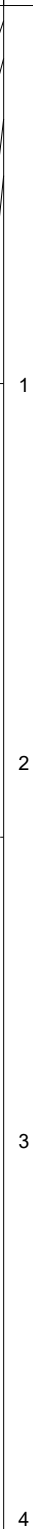


LITHOS CONSULTING					Borehole Log			Borehole No. WS11 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 418136.00 - 412746.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		Logged By ET
Client: Ubrique Investments					Dates: 20/07/2022 - 20/07/2022				
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	T		0.19		MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)	1	
					0.40		MADE GROUND: Dark brown subangular fine to coarse of mixed lithologies. (GRANULAR MADE GROUND)		
							MADE GROUND: Orangish brown slightly sandy gravelly CLAY. Gravel is subangular fine to coarse of sandstone. (COHESIVE MADE GROUND)		
		1.50	J&T		1.85			2	
	2.00 - 2.50	D		1.95		Dark brown slightly sandy slightly gravelly CLAY with rare decomposing rootlets. Gravel is subangular fine to coarse of sandstone. (RELICT TOPSOIL)			
						Firm light brown gravelly SILT. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)			
		3.00	T		2.80		Light brown SANDSTONE. Recovered as slightly clayey subangular coarse. (GRENOSIDE SANDSTONE - COAL MEASURES)	3	
					4.00		At 4.0m, refused on bedrock.	4	
End of borehole at 4.00 m									

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
3. Co-ordinates from hand held GPS, hole not surveyed in.

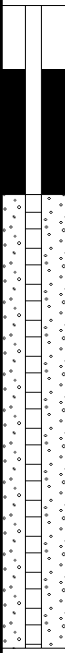
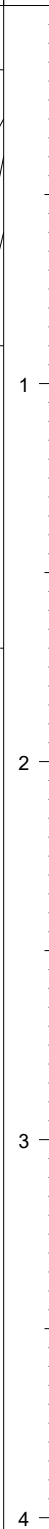
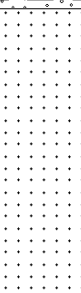
				Borehole Log			Borehole No. WS12 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417909.00 - 412640.00		Hole Type WS
Location: Kirkburton				Level:		Scale 1:20		
Client: Ubrique Investments				Dates: 20/07/2022 - 20/07/2022		Logged By ET		

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.04	T		0.04		MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)		
					0.14		MADE GROUND: Strong light grey CONCRETE. (CONCRETE HARDSTAND)		
		0.30 - 0.45	J		0.30		MADE GROUND: Multicoloured poorly cemented rounded coarse GRAVEL of mixed lithologies. (GRANULAR MADE GROUND)		
					0.45		At 0.3m, predominately gravel of brick. Brown slightly clayey gravelly SAND. Gravel subangular fine to coarse of sandstone. (GRANULAR RESIDUAL SOIL)		
		0.80	D		1.00		Firm orangish brown gravelly SILT. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)		
					2.20		Light brown SANDSTONE. Recovered as clayey tabular gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) At 2.2, refused on bedrock.	1	
End of borehole at 2.20 m								2	
								3	
								4	

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.		
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LITHOS CONSULTING					Borehole Log			Borehole No. WS13 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 417951.00 - 412698.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		Logged By ET
Client: Ubrique Investments					Dates: 20/07/2022 - 20/07/2022				
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			MADE GROUND: Dark brown slightly sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone. (MADE GROUND TOPSOIL)	
		0.50 - 0.60	J		0.50			MADE GROUND: Dark brown sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR MADE GROUND)	
		0.70	J&T		0.60			MADE GROUND: Purplish black ash SAND and GRAVEL of clinker. (ASH & CLINKER)	
					0.80			Dark brown sandy slightly gravelly CLAY. Gravel is subangular tabular fine to coarse of sandstone, coal and clinker. (RELICT TOPSOIL)	
								Firm orangish brown sandy slightly gravelly CLAY. Gravel is subangular tabular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)	1
		1.70 - 1.80	D		1.90		Light brown SANDSTONE. Recovered as sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	2	
					2.60		At 2.6m, refused on bedrock.	3	
							End of borehole at 2.60 m	4	

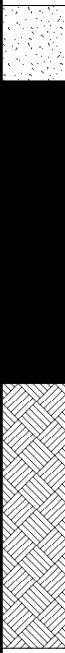
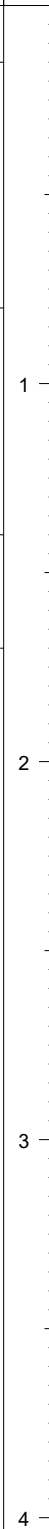
Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.

				Borehole Log			Borehole No. WS14 Sheet 1 of 1		
Project Name: Storthes Hall				Project No. 4473		Co-ords: 417926.00 - 412751.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 20/07/2022 - 20/07/2022					
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10	T		0.17			MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)	
					0.30			MADE GROUND: Grey angular medium to coarse GRAVEL of limestone. (SUB-BASE)	
					0.40			Dark brown slightly sandy slightly gravelly CLAY. Gravel is angular fine of coal. (RELICT TOPSOIL)	
					0.60			Firm reddish brown slightly gravelly SILT. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)	
					0.90			Orangish brown clayey subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)	
		1.10 - 1.20	T					Light brown SANDSTONE. Recovered as sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	
					1.70			At 1.7m, refused on bedrock.	
								End of borehole at 1.70 m	

Remarks
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
3. Co-ordinates from hand held GPS, hole not surveyed in.



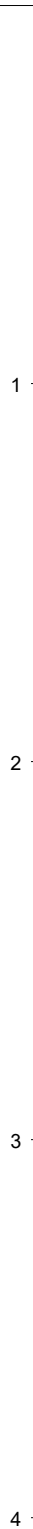
					Borehole Log			Borehole No. WS15 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 417957.00 - 412783.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		
Client: Ubrique Investments					Dates: 20/07/2022 - 20/07/2022		Logged By ET		

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.15		MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)		
		0.40 - 0.60	J&T				MADE GROUND: Multicoloured sandy subangular fine to coarse GRAVEL of glass, brick, tarmac and concrete. (GRANULAR MADE GROUND)		
		1.00 - 1.40	T		0.80		Orangish brown gravelly slightly clayey SAND. Gravel is subangular tabular fine to coarse sandstone. (GRANULAR RESIDUAL SOIL)		
					1.40		Light brown SANDSTONE. Recovered as sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)		
					1.70		<u>At 1.7m, refused on bedrock.</u> End of borehole at 1.70 m		

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.		
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LITHOS CONSULTING					Borehole Log			Borehole No. WS16 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 417989.00 - 412814.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		
Client: Ubrique Investments					Dates: 21/07/2022 - 21/07/2022		Logged By ET		
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.09	T		0.09		MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)		
		0.30 - 0.40	J&K		0.30		MADE GROUND: Light brown angular fine to coarse GRAVEL of limestone. (SUB-BASE)		
		0.50 - 0.60	K		0.45		MADE GROUND: Dark brown clayey slightly sandy subangular fine to coarse GRAVEL of brick, coal, sandstone. (GRANULAR MADE GROUND) <i>Between 0.3m and 0.8m, hydrocarbon odour.</i>		
					0.80		MADE GROUND: Black slightly sandy angular fine to coarse GRAVEL of brick. With many fragments of coarse gravel sized wood and rare fragments of gravel sized metal. (GRANULAR MADE GROUND) <i>Between 0.7m and 0.8m, predominately gravel of brick.</i>		
		1.00	J		1.15		Firm orangish brown slightly gravelly SILT. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)	1	
					1.70		Orangish brown slightly sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)		
					2.40		Firm orangish brown gravelly CLAY. Gravel is subangular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)	2	
					2.50		Light brown SANDSTONE. Recovered as slightly sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 2.5m, refused on bedrock.</i> End of borehole at 2.50 m		
									3
									4
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									

				Borehole Log			Borehole No. WS18 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418006.00 - 412718.00		Hole Type WS
Location: Kirkburton				Level:		Scale 1:20		
Client: Ubrique Investments				Dates: 21/07/2022 - 21/07/2022		Logged By ET		

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.19			MADE GROUND: Strong black TARMAC. (TARMAC HARDSTAND)	
		0.30 - 0.40	J		0.30			MADE GROUND: Buff slightly sandy angular fine to coarse GRAVEL of limestone. (SUB-BASE)	
		0.50 - 0.70	T		0.40			MADE GROUND: Brown slightly sandy fine to coarse GRAVEL of brick and clinker. (GRANULAR MADE GROUND)	
					0.50			Orange fine to coarse SAND. (GRANULAR RESIDUAL SOIL)	
					0.70			Light brown SANDSTONE. Recovered as slightly sandy subangular fine to coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	
								At 0.7m, refused on bedrock. End of borehole at 0.70 m	

Remarks

1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.



				Borehole Log				Borehole No. WS19 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418029.00 - 412693.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20			
Client: Ubrique Investments				Dates: 21/07/2022 - 21/07/2022		Logged By ET			
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.20	J					MADE GROUND: Dark brown friable slightly sandy slightly gravelly CLAY with occasional rootlets. Gravel is angular fine to medium of mixed lithologies. (MADE GROUND TOPSOIL) MADE GROUND: Buff slightly sandy angular to subangular fine to medium GRAVEL of limestone. (GRANULAR MADE GROUND) MADE GROUND: Brown and orange slightly sandy angular to subangular fine to coarse GRAVEL of predominantly brick and rare ceramic, glass and clinker. (GRANULAR MADE GROUND) Orangish brown clayey slightly sandy angular tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL) <i>At 0.45m, geotextile layer.</i> Orange slightly clayey slightly sandy subangular tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)	
		0.30 - 0.40	J		0.20				
		0.50 - 0.90	T		0.30				
					0.45				
					0.70				
					1.40		Light brown SANDSTONE. Recovered as slightly sandy angular tabular fine to coarse gravel. (GRANOSIDE SANDSTONE - COAL MEASURES)		
					2.10		<i>At 2.1m, refused on bedrock.</i> End of borehole at 2.10 m		
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									



				Borehole Log				Borehole No. WS20 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418027.00 - 412754.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 21/07/2022 - 21/07/2022					

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.20 - 0.30	J		0.20			MADE GROUND: Dark brown gravelly slightly clayey SAND. Gravel is angular to subangular fine to coarse of sandstone and concrete. (MADE GROUND TOPSOIL)	1 2 3 4
					0.30			MADE GROUND: Light brown gravelly SAND. Gravel is subangular to subrounded fine to medium of mixed lithologies. (GRANULAR MADE GROUND)	
					0.40			MADE GROUND: Light brown sandy subangular fine to coarse GRAVEL of predominantly brick and some sandstone. (GRANULAR MADE GROUND)	
					0.50			Light brown SANDSTONE. Recovered as slightly sandy subangular tabular coarse gravel. (GRÉNOSIDE SANDSTONE - COAL MEASURES)	
								At 0.5m, refused on bedrock. End of borehole at 0.50 m	

Remarks

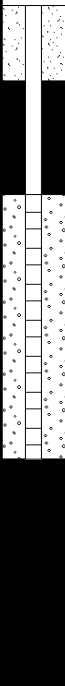
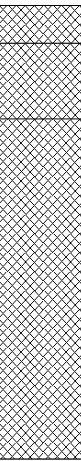
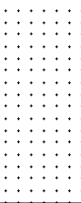
1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.



				Borehole Log				Borehole No. WS21 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418056.00 - 412787.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 21/07/2022 - 21/07/2022					

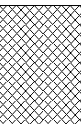
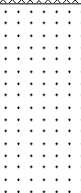
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.35	J&T				MADE GROUND: Dark brown sandy slightly gravelly CLAY. Gravel is subangular fine to coarse coal and sandstone. (MADE GROUND TOPSOIL)		
		0.35 - 0.80	J&T		0.35		MADE GROUND: Light brown gravelly SAND. Gravel is subangular fine to coarse sandstone, concrete and coal. With some fragments of gravel sized wood. (GRANULAR MADE GROUND) <i>At 0.55m, becoming reddish brown.</i> <i>At 0.8m, geotextile layer.</i> <i>At 1.0m, refused on bedrock.</i>		
				0.80			Light brown SANDSTONE. Recovered as slightly clayey subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	1	
				1.00			End of borehole at 1.00 m	1	
								2	
								3	
								4	

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.								
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				Borehole Log				Borehole No. WS22 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418053.00 - 412808.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20			
Client: Ubrique Investments				Dates: 21/07/2022 - 21/07/2022		Logged By ET			
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.10	J		0.10			MADE GROUND: Dark brown friable sandy CLAY with many rootlets. (MADE GROUND TOPSOIL) MADE GROUND: Orange and brown mottled gravelly slightly sandy CLAY. Gravel is subangular fine to coarse of mixed lithologies. (COHESIVE MADE GROUND) MADE GROUND: Orangish brown slightly sandy clayey GRAVEL. Gravel is subangular tabular fine to coarse sandstone and coal. (GRANULAR MADE GROUND)	
		0.20	J		0.30				
		0.50 - 0.80	J&T						
						1.20		Light brown SANDSTONE. Recovered as slightly sandy subangular tabular fine to coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	
					1.80			At 1.8m, refused on bedrock.	
End of borehole at 1.80 m									
Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.									



				Borehole Log				Borehole No. WS23 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418045.00 - 412844.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 21/07/2022 - 21/07/2022					

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.35	J		0.35			MADE GROUND: Dark brown friable slightly sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of coal, brick and sandstone. (MADE GROUND TOPSOIL)	1 2 3 4
		0.50 - 0.70	T					Light brown SANDSTONE. Recovered as slightly sandy subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES)	
						0.90			

Remarks
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
 3. Co-ordinates from hand held GPS, hole not surveyed in.



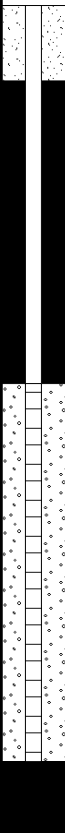
				Borehole Log				Borehole No. WS24 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418085.00 - 412823.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 22/07/2022 - 22/07/2022					

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.30	J					MADE GROUND: Dark brown friable gravelly slightly sandy CLAY with occasional rootlets. Gravel is subangular fine to coarse of mixed lithologies. (MADE GROUND TOPSOIL)	1 2 3 4
					0.30			MADE GROUND: Light brown sandy subangular fine to coarse GRAVEL of sandstone. (GRANULAR MADE GROUND)	
					0.45			MADE GROUND: Multicoloured angular to subangular coarse GRAVEL of quartzite and brick. (GRANULAR MADE GROUND)	
		0.60 - 0.80	T		0.60			Orangish brown SANDSTONE. recovered as sandy subangular tabular fine to coarse gravel. (GRÉNOSIDE SANDSTONE - COAL MEASURES)	
					0.80			At 0.8m, refused on bedrock. End of borehole at 0.80 m	

Remarks
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
 3. Co-ordinates from hand held GPS, hole not surveyed in.



				Borehole Log				Borehole No. WS25 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418108.00 - 412839.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 22/07/2022 - 22/07/2022					

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.20	J				MADE GROUND: Dark brown friable slightly sandy CLAY with occasional rootlets. (MADE GROUND TOPSOIL)		
		0.20 - 0.40	J		0.20		MADE GROUND: Light brown sandy subangular fine to coarse GRAVEL of sandstone. Rare angular fine gravel of coal. (GRANULAR MADE GROUND)		
		0.60 - 1.00	J		0.60		MADE GROUND: Multicoloured slightly sandy subangular fine to coarse GRAVEL of clinker and concrete. (GRANULAR MADE GROUND)		
							MADE GROUND: Red and black mottled sandy angular fine to coarse GRAVEL of clinker and brick. (GRANULAR MADE GROUND)		
		2.00 - 2.15	J		2.15 2.20		Light brown SANDSTONE. Recovered as subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 2.2m, refused on bedrock.</i> End of borehole at 2.20 m		

1
2
3
4

Remarks
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
 3. Co-ordinates from hand held GPS, hole not surveyed in.



				Borehole Log				Borehole No. WS26 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418117.00 - 412869.00		Hole Type WS	
Location: Kirkburton				Level:		Scale 1:20		Logged By ET	
Client: Ubrique Investments				Dates: 22/07/2022 - 22/07/2022					

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.25	J					MADE GROUND: Dark brown friable slightly sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone, concrete and brick.	
		0.25 - 0.60	J		0.25			(MADE GROUND TOPSOIL)	
								MADE GROUND: Multicoloured sandy subangular fine to coarse GRAVEL of tarmac, concrete and brick.	
		0.60 - 1.00	T		0.60			(GRANULAR MADE GROUND)	
								Light brown SANDSTONE. Recovered as slightly clayey slightly sandy subangular tabular fine to coarse gravel.	
								(GRENOSIDE SANDSTONE - COAL MEASURES)	
					1.20			At 1.2m, refused on bedrock.	
								End of borehole at 1.20 m	

1

2

3

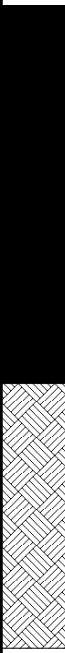
4

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.		
--	--	---

LITHOS CONSULTING				Borehole Log			Borehole No. WS27 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418098.00 - 412894.00		Hole Type WS
Location: Kirkburton				Level:		Scale 1:20		Logged By ET
Client: Ubrique Investments				Dates: 22/07/2022 - 22/07/2022				
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.00 - 0.15	J		0.15		MADE GROUND: Dark brown friable slightly sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone, concrete and brick. (MADE GROUND TOPSOIL)	
		0.60 - 0.90	J		0.60		MADE GROUND: Multicoloured sandy subangular fine to coarse GRAVEL of concrete, limestone and brick. (GRANULAR MADE GROUND) <i>Between 0.2m and 0.3m, gravel is predominantly of concrete.</i> <i>Between 0.3m and 0.35m, gravel is predominantly of limestone.</i> <i>Between 0.2m and 0.3m, gravel is predominantly of brick.</i>	
		1.00 - 1.50	T		0.90		Dark brown friable slightly sandy slightly gravelly CLAY with rare rootlets. Gravel is subangular fine of mixed lithologies. (RELICT TOPSOIL)	
		1.50 - 2.00	T		1.50		Firm orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular tabular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)	
					2.00		Light brown SANDSTONE. Recovered as slightly clayey slightly sandy subangular tabular fine to coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 2.0m, refused on bedrock.</i>	2
End of borehole at 2.00 m								3
								4

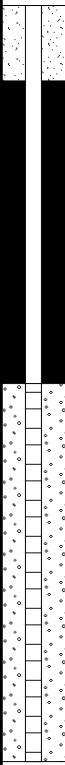
Remarks
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
 3. Co-ordinates from hand held GPS, hole not surveyed in.

				Borehole Log			Borehole No. WS28 Sheet 1 of 1	
Project Name: Storthes Hall				Project No. 4473		Co-ords: 418182.00 - 412879.00		Hole Type WS
Location: Kirkburton				Level:		Scale 1:20		
Client: Ubrique Investments				Dates: 22/07/2022 - 22/07/2022		Logged By ET		

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 0.25	J				MADE GROUND: Dark brown friable slightly sandy slightly gravelly CLAY. Gravel is subangular fine of mixed lithologies. (MADE GROUND TOPSOIL)		
		0.25 - 0.65	T		0.25		MADE GROUND: Light brown sandy subangular fine to coarse GRAVEL of sandstone and brick. Rare copper wire. (GRANULAR MADE GROUND) <i>At 0.65m, geotextile membrane.</i>		
					0.65				
					0.80		Dark brown sandy slightly clayey subangular fine to coarse GRAVEL of clinker and concrete. (GRANULAR RESIDUAL SOIL)		
					1.55		Orangish brown and light brown slightly clayey slightly sandy subangular tabular fine to coarse GRAVEL of sandstone. (GRANULAR RESIDUAL SOIL)	1	
				1.70		Light brown SANDSTONE. Recovered as sandy subangular tabular fine to coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 1.7m, refused on bedrock.</i> End of borehole at 1.70 m	2		
								3	
								4	

Remarks 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling. 3. Co-ordinates from hand held GPS, hole not surveyed in.		
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					Borehole Log			Borehole No. WS29 Sheet 1 of 1	
Project Name: Storthes Hall					Project No. 4473		Co-ords: 418205.00 - 412865.00		Hole Type WS
Location: Kirkburton					Level:		Scale 1:20		
Client: Ubrique Investments					Dates: 22/07/2022 - 22/07/2022		Logged By ET		

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.60	J		0.10		MADE GROUND: Dark brown friable slightly sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of mixed lithologies. (MADE GROUND TOPSOIL) MADE GROUND: Light brown gravelly SAND. Gravel is subangular fine to coarse of sandstone, tarmac and rare brick. (GRANULAR MADE GROUND)		
					0.60				
					0.80				
		1.00 - 1.50	D		1.00		MADE GROUND: Orangish brown slightly sandy slightly gravelly CLAY. Gravel is subangular fine to coarse of sandstone. (COHESIVE MADE GROUND) Dark brown slightly sandy CLAY with occasional decomposing rootlets. (RELICT TOPSOIL) Firm orangish brown sandy CLAY. (COHESIVE RESIDUAL SOIL)	1	
		1.50 - 1.80	D		1.50		Firm orangish brown sandy slightly gravelly CLAY. Gravel is subangular tabular fine to coarse of sandstone. (COHESIVE RESIDUAL SOIL)		
					1.80				
				2.00		Light brown SANDSTONE. Recovered as subangular tabular coarse gravel. (GRENOSIDE SANDSTONE - COAL MEASURES) <i>At 2.0m, refused on bedrock.</i> End of borehole at 2.00 m	2		
								3	
								4	

Remarks
 1. Prior to drilling a Cable Avoidance Tool (CAT) survey was carried out. 2. Groundwater was not apparent during drilling.
 3. Co-ordinates from hand held GPS, hole not surveyed in.



LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

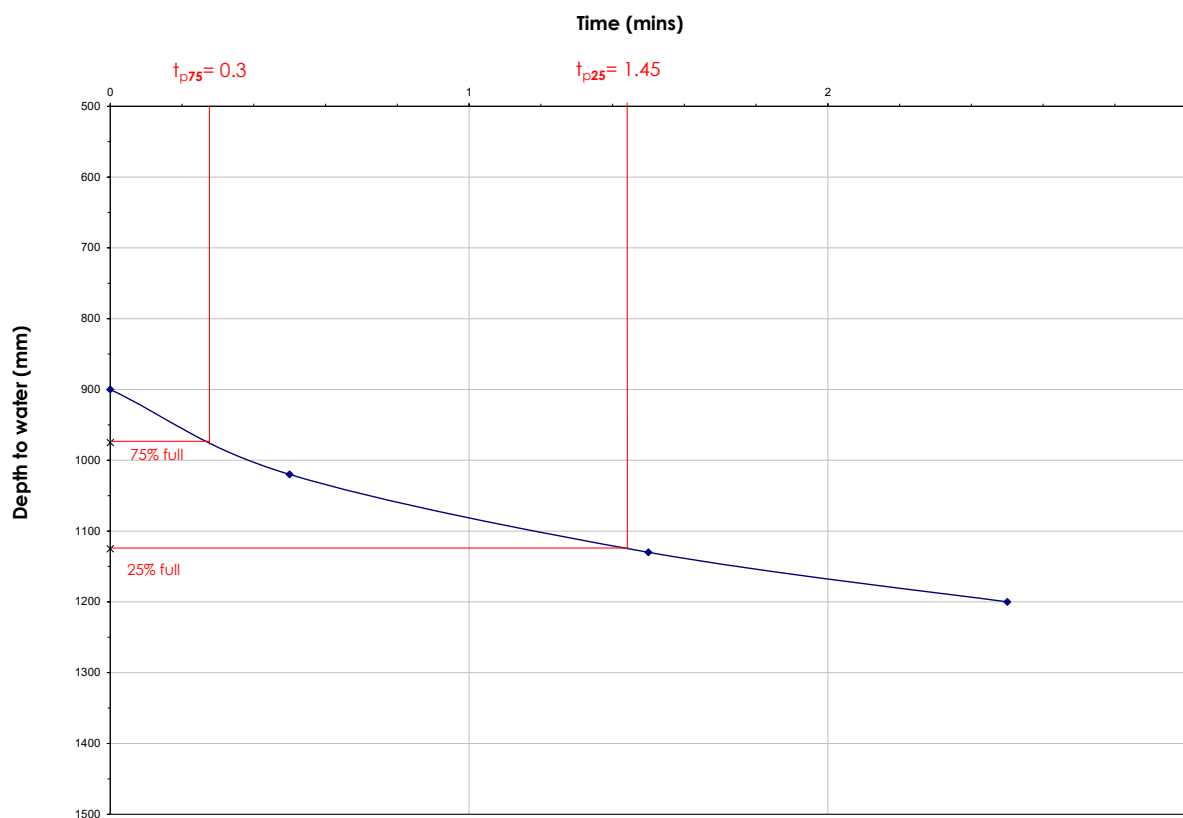
Date:	19/07/2022
Trial Pit No.	TP01
Test No.	1

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	0.58	580
Width	=	2.08	2080
Depth	=	1.20	1200
Effective Depth (% full)		(mm)	(m)
0.25	=	1125	1.13
0.50	=	1050	1.05
0.75	=	975	0.98
Depth at start of test (mm)		=	900
Depth at end of test (mm)		=	1200

Base area of pit	=	1.2064
A_{p50} - 50% internal surface area inc. base	=	2.0044
V_{p75-25} - Volume 75 - 25%	=	0.18096

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.3
$t_{p\ 25}$ (min)	=	1.45



Soil infiltration rate, f , (m/s) = 1.31E-03

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

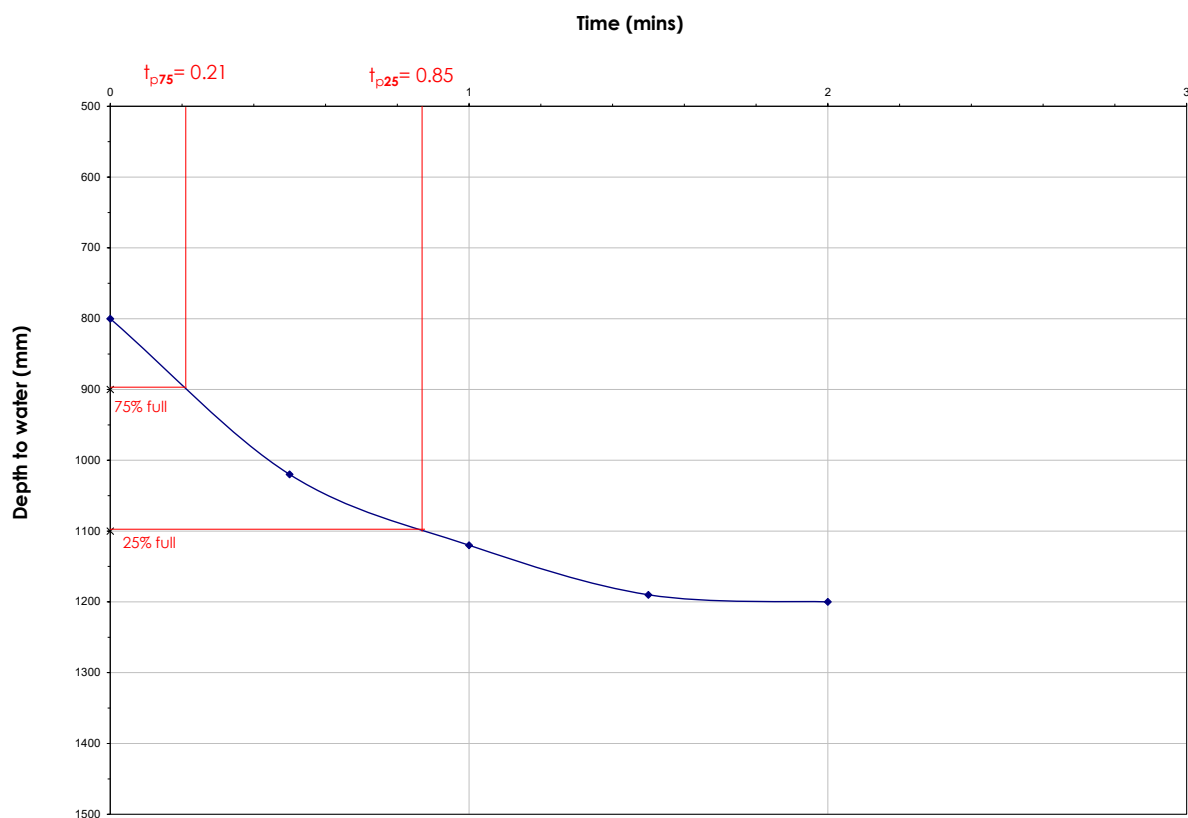
Date:	19/07/2022
Trial Pit No.	TP01
Test No.	2

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.08	2080
Width	=	0.58	580
Depth	=	1.20	1200
Effective Depth (% full)		(mm)	(m)
0.25	=	1100	1.10
0.50	=	1000	1.00
0.75	=	900	0.90
Depth at start of test (mm)		=	800
Depth at end of test (mm)		=	1200

Base area of pit	=	1.2064
A_{p50} - 50% internal surface area inc. base	=	2.2704
V_{p75-25} - Volume 75 - 25%	=	0.24128

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.21
$t_{p\ 25}$ (min)	=	0.85



Soil infiltration rate, f , (m/s) = 2.77E-03

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

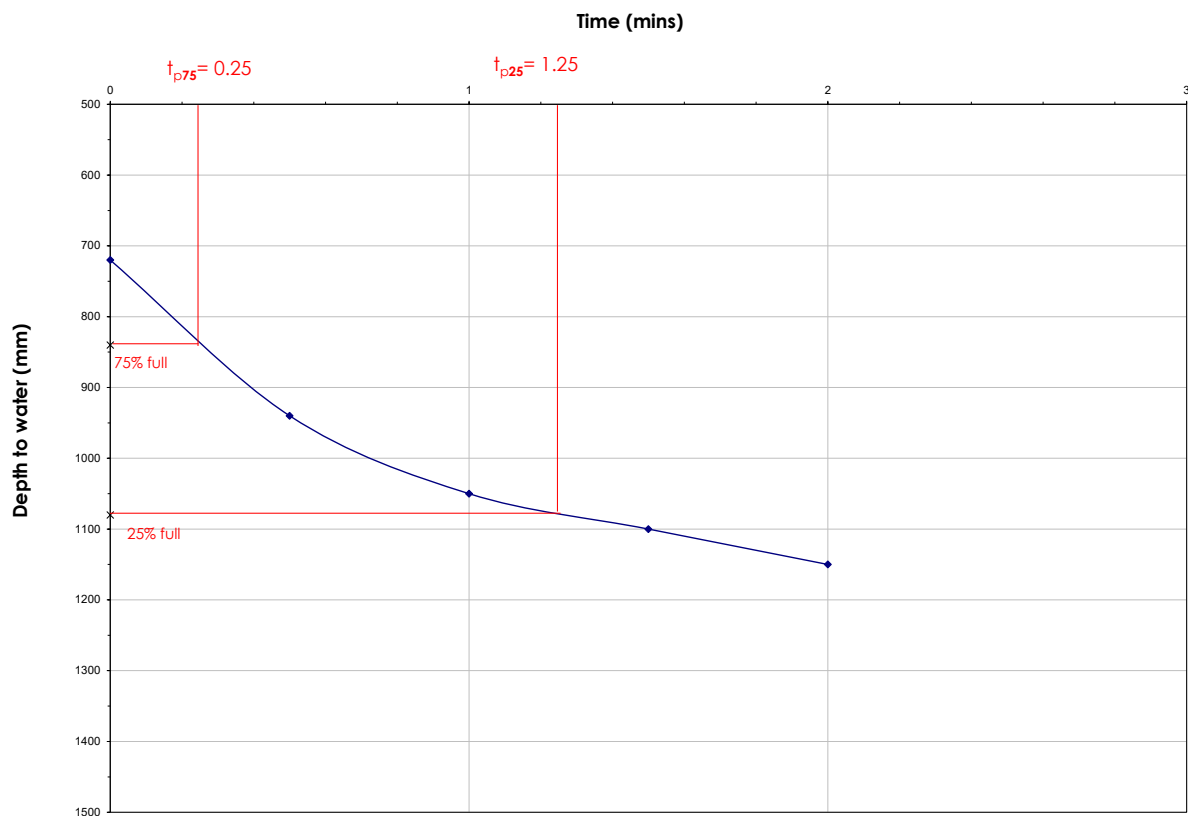
Date:	19/07/2022
Trial Pit No.	TP01
Test No.	3

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.08	2080
Width	=	0.58	580
Depth	=	1.20	1200
Effective Depth (% full)		(mm)	(m)
0.25	=	1080	1.08
0.50	=	960	0.96
0.75	=	840	0.84
Depth at start of test (mm)		=	720
Depth at end of test (mm)		=	1150

Base area of pit	=	1.2064
A_{p50} - 50% internal surface area inc. base	=	2.4832
V_{p75-25} - Volume 75 - 25%	=	0.289536

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.25
$t_{p\ 25}$ (min)	=	1.25



Soil infiltration rate, f , (m/s) = 1.94E-03

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

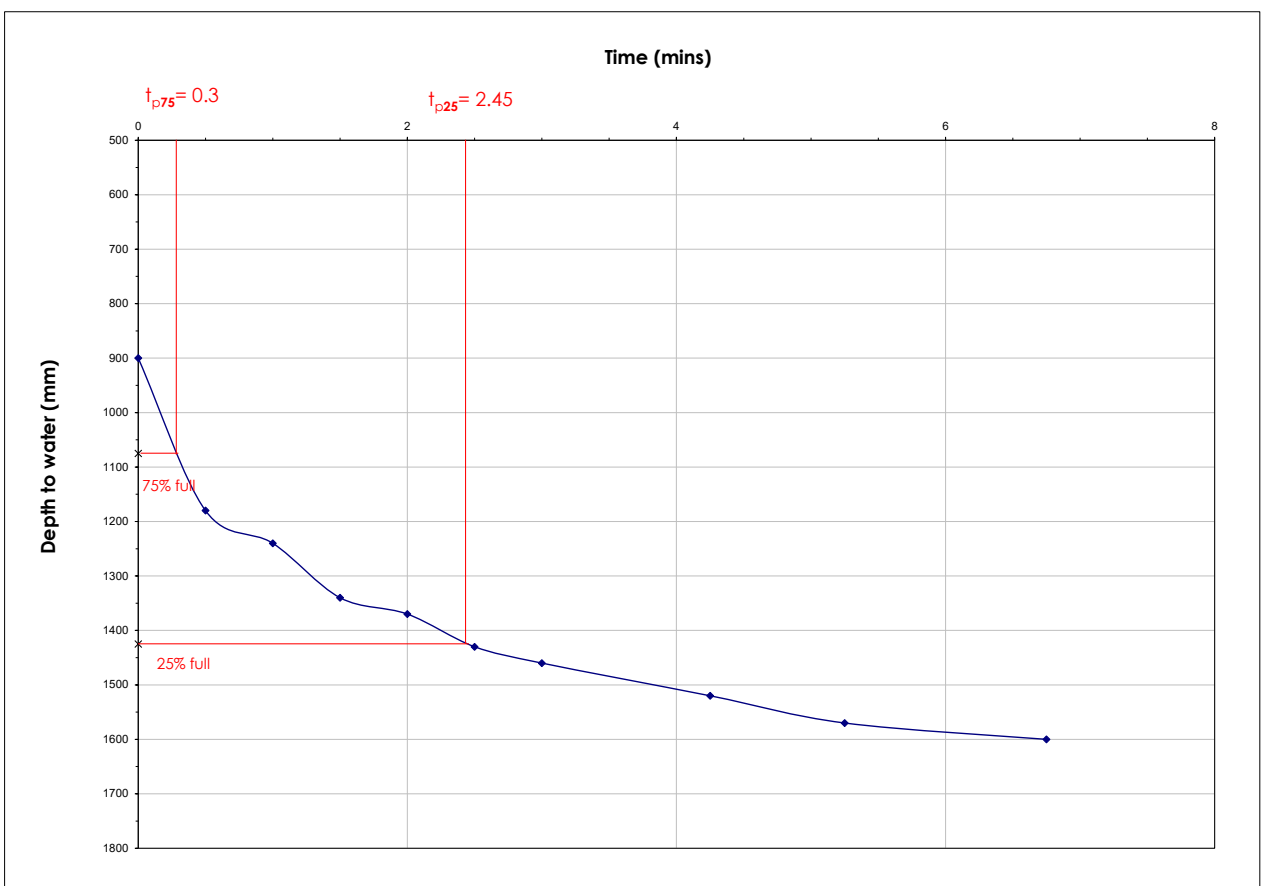


Date:	19/07/2022
Trial Pit No.	TP02
Test No.	1

Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
09:31:45	0	0.90	900
09:32:15	0.5	1.18	1180
09:32:45	1	1.24	1240
09:33:15	1.5	1.34	1340
09:33:45	2	1.37	1370
09:34:15	2.5	1.43	1430
09:34:45	3	1.46	1460
09:36:00	4.25	1.52	1520
09:37:00	5.25	1.57	1570
09:38:30	6.75	1.60	1600
		Dry	

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.15	2150
Width	=	0.60	600
Depth	=	1.60	1600
Effective Depth (% full)		(mm)	(m)
0.25	=	1425	1.43
0.50	=	1250	1.25
0.75	=	1075	1.08
Depth at start of test (mm)		=	900
Depth at end of test (mm)		=	1600
Base area of pit		=	1.29
A _{p50} - 50% internal surface area inc. base		=	3.215
V _{p75-25} - Volume 75 - 25%		=	0.4515

Read from the graph:			
t _{p75} (min)	=	0.3	
t _{p25} (min)	=	2.45	



Soil infiltration rate, f , (m/s) = 1.09E-03

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

Date:	19/07/2022
Trial Pit No.	TP02
Test No.	2

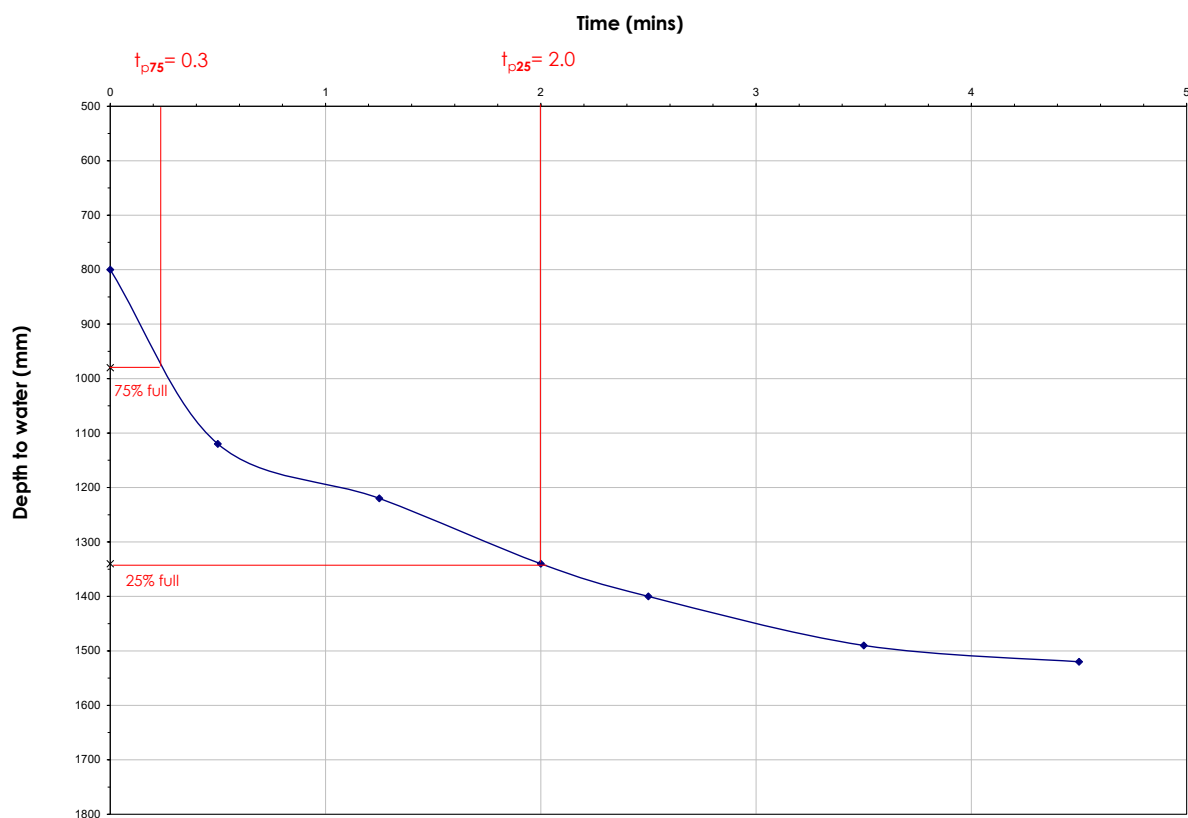
[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.15	2150
Width	=	0.60	600
Depth	=	1.52	1520
Effective Depth (% full)		(mm)	(m)
0.25	=	1340	1.34
0.50	=	1160	1.16
0.75	=	980	0.98

Depth at start of test (mm)	=	800
Depth at end of test (mm)	=	1520

Base area of pit	=	1.29
A_{p50} - 50% internal surface area inc. base	=	3.27
V_{p75-25} - Volume 75 - 25%	=	0.4644

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.3
$t_{p\ 25}$ (min)	=	2



Soil infiltration rate, f , (m/s) = 1.39E-03

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

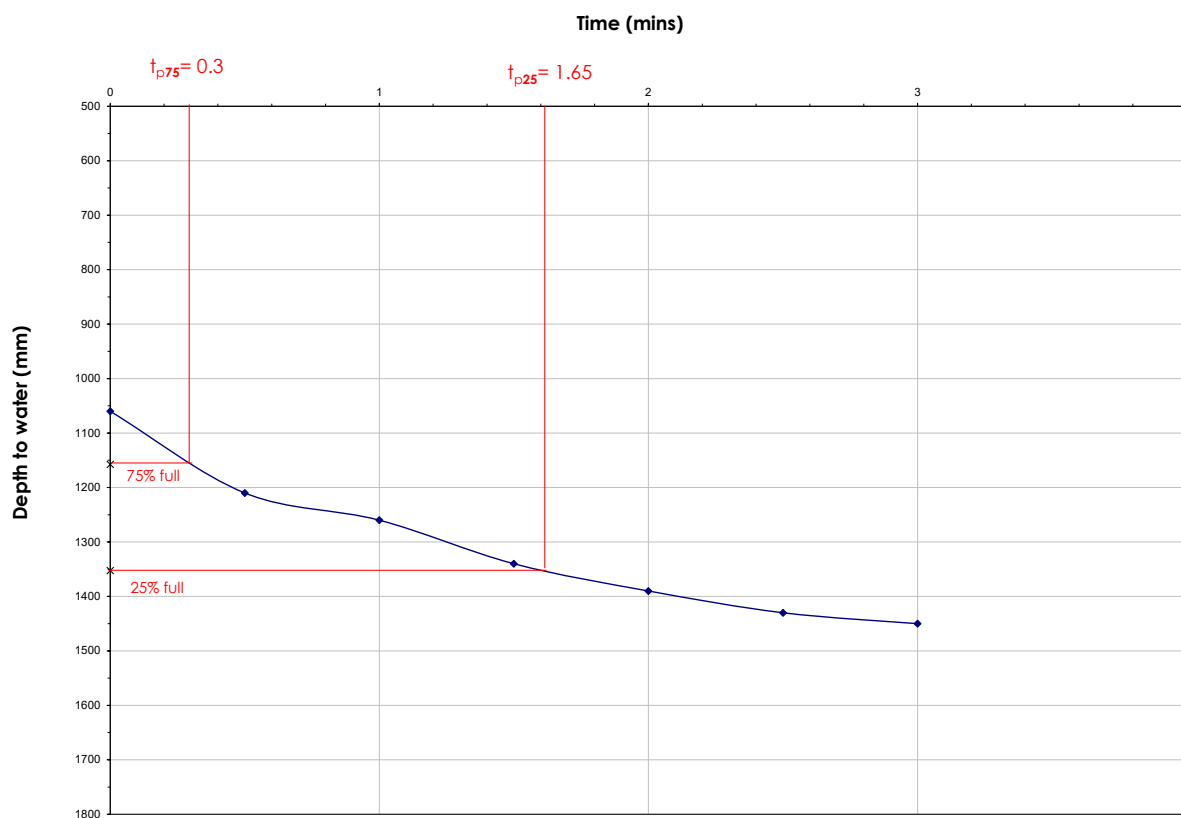
Date:	19/07/2022
Trial Pit No.	TP02
Test No.	3

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.15	2150
Width	=	0.60	600
Depth	=	1.45	1450
Effective Depth (% full)		(mm)	(m)
0.25	=	1352.5	1.35
0.50	=	1255	1.26
0.75	=	1157.5	1.16
Depth at start of test (mm)		=	1060
Depth at end of test (mm)		=	1450

Base area of pit	=	1.29
A_{p50} - 50% internal surface area inc. base	=	2.3625
V_{p75-25} - Volume 75 - 25%	=	0.25155

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.3
$t_{p\ 25}$ (min)	=	1.65



Soil infiltration rate, f , (m/s) = 1.31E-03

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

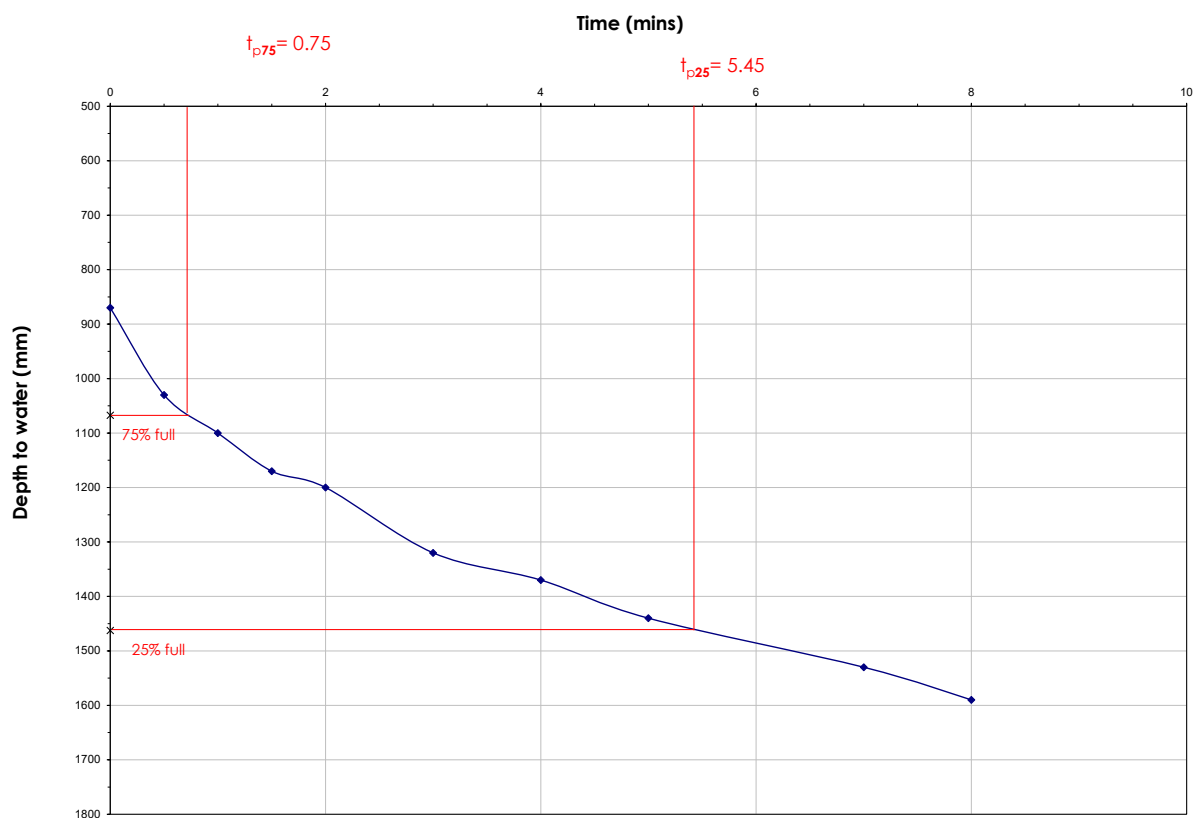
Date:	19/07/2022
Trial Pit No.	TP03
Test No.	1

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.12	2120
Width	=	0.60	600
Depth	=	1.66	1660
Effective Depth (% full)		(mm)	(m)
0.25	=	1462.5	1.46
0.50	=	1265	1.27
0.75	=	1067.5	1.07
Depth at start of test (mm)		=	870
Depth at end of test (mm)		=	1590

Base area of pit	=	1.272
A_{p50} - 50% internal surface area inc. base	=	3.4208
V_{p75-25} - Volume 75 - 25%	=	0.50244

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.75
$t_{p\ 25}$ (min)	=	5.45



Soil infiltration rate, f , (m/s) = 5.21E-04

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

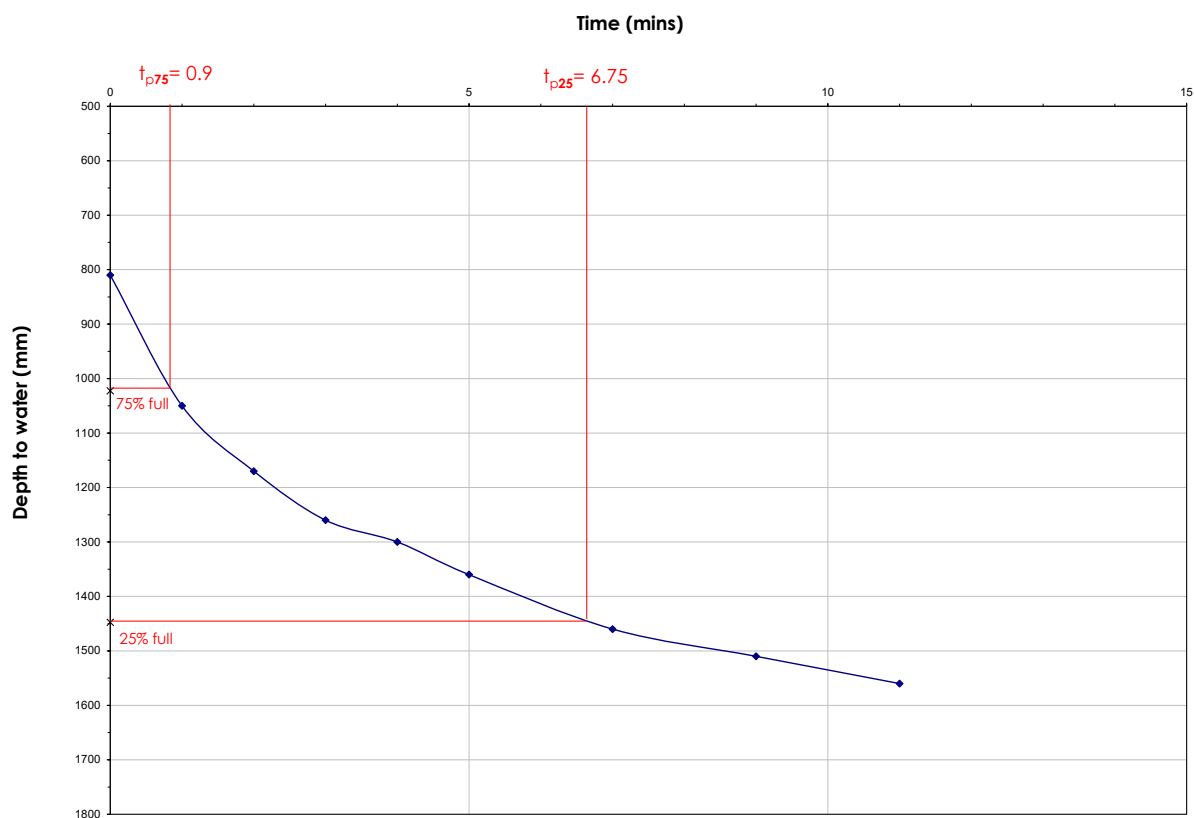
Date:	19/07/2022
Trial Pit No.	TP03
Test No.	2

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.12	2120
Width	=	0.60	600
Depth	=	1.66	1660
Effective Depth (% full)		(mm)	(m)
0.25	=	1447.5	1.45
0.50	=	1235	1.24
0.75	=	1022.5	1.02
Depth at start of test (mm)		=	810
Depth at end of test (mm)		=	1560

Base area of pit	=	1.272
A_{p50} - 50% internal surface area inc. base	=	3.584
V_{p75-25} - Volume 75 - 25%	=	0.5406

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.9
$t_{p\ 25}$ (min)	=	6.75



Soil infiltration rate, f , (m/s) = 4.30E-04

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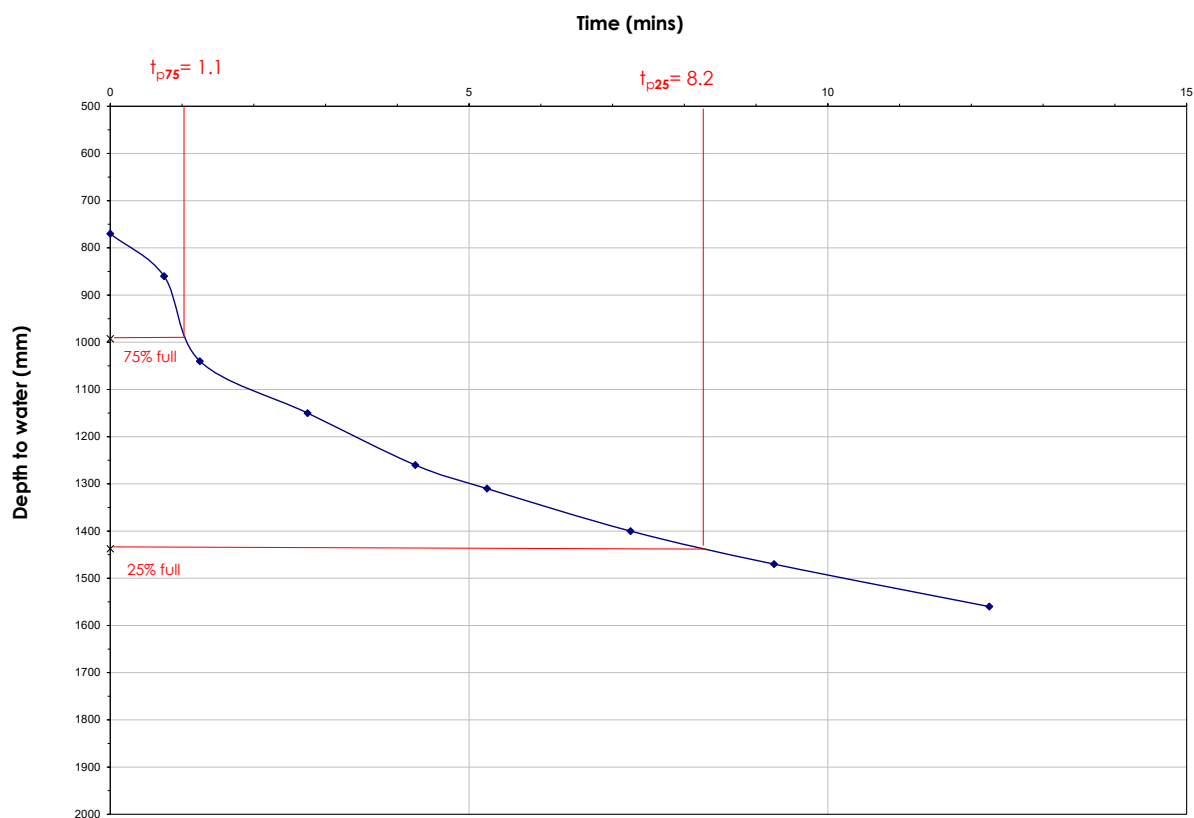
Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

Date:	19/07/2022
Trial Pit No.	TP03
Test No.	3

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.12	2120
Width	=	0.60	600
Depth	=	1.66	1660
Effective Depth (% full)		(mm)	(m)
0.25	=	1437.5	1.44
0.50	=	1215	1.22
0.75	=	992.5	0.99
Depth at start of test (mm)		=	770
Depth at end of test (mm)		=	1560
Base area of pit		=	1.272
a _{p50} - 50% internal surface area inc. base		=	3.6928
V _{0.75-25} - Volume 75 - 25%		=	0.56604

Read from the graph:		
$t_{p\ 75}$ (min)	=	1.1
$t_{p\ 25}$ (min)	=	8.2



Soil infiltration rate, f , (m/s) = 3.60E-04

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

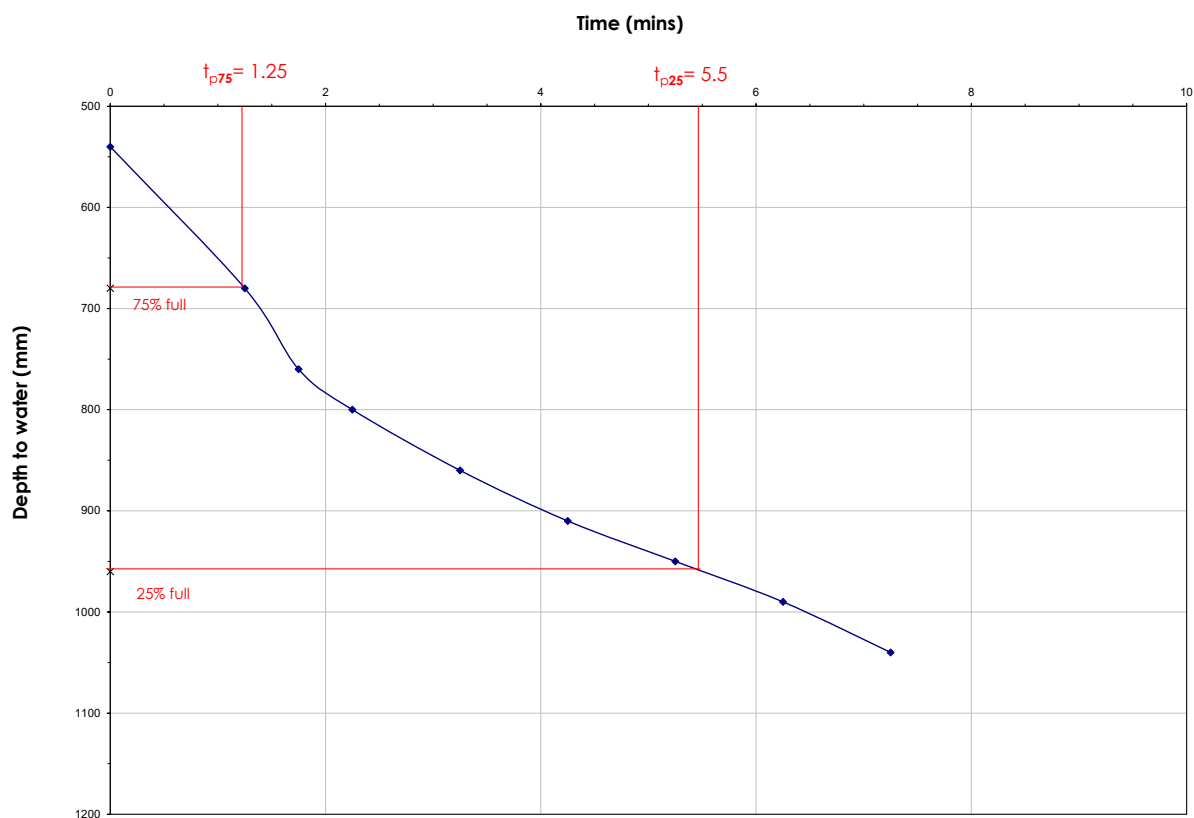
Date:	19/07/2022
Trial Pit No.	TP04
Test No.	1

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.04	2040
Width	=	0.59	590
Depth	=	1.10	1100
Effective Depth (% full)		(mm)	(m)
0.25	=	960	0.96
0.50	=	820	0.82
0.75	=	680	0.68
Depth at start of test (mm)		=	540
Depth at end of test (mm)		=	1040

Base area of pit	=	1.2036
A_{p50} - 50% internal surface area inc. base	=	2.6764
V_{p75-25} - Volume 75 - 25%	=	0.337008

Read from the graph:		
$t_{p\ 75}$ (min)	=	1.25
$t_{p\ 25}$ (min)	=	5.5



Soil infiltration rate, f , (m/s) = 4.94E-04

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storches Hall, Kirkburton
Job No.:	4473

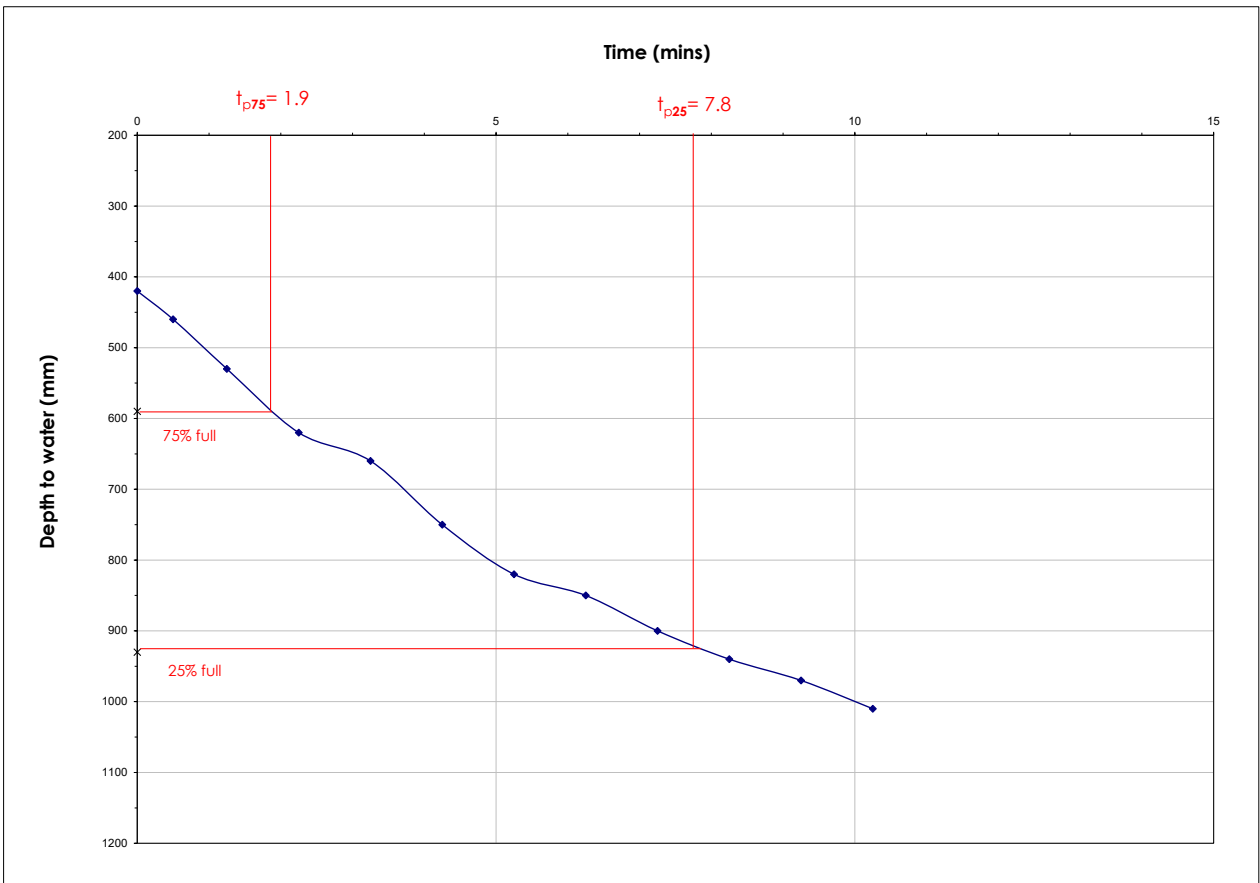


Date:	19/07/2022
Trial Pit No.	TP04
Test No.	2

Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
15:07:45	0	0.42	420
15:08:15	0.5	0.46	460
15:09:00	1.25	0.53	530
15:10	2.25	0.62	620
15:11	3.25	0.66	660
15:12	4.25	0.75	750
15:13	5.25	0.82	820
15:14	6.25	0.85	850
15:15	7.25	0.90	900
15:16	8.25	0.94	940
15:17	9.25	0.97	970
15:18	10.25	1.01	1010

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.04	2040
Width	=	0.59	590
Depth	=	1.10	1100
Effective Depth (% full)		(mm)	(m)
0.25	=	930	0.93
0.50	=	760	0.76
0.75	=	590	0.59
Depth at start of test (mm)		=	420
Depth at end of test (mm)		=	1010
Base area of pit		=	1.2036
a _{p50} - 50% internal surface area inc. base		=	2.992
V _{p75-25} - Volume 75 - 25%		=	0.409224

Read from the graph:			
t _{p 75} (min)	=	1.9	
t _{p 25} (min)	=	7.8	



Soil infiltration rate, f , (m/s) = 3.86E-04

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473



Date:	19/07/2022
Trial Pit No.	TP04
Test No.	3

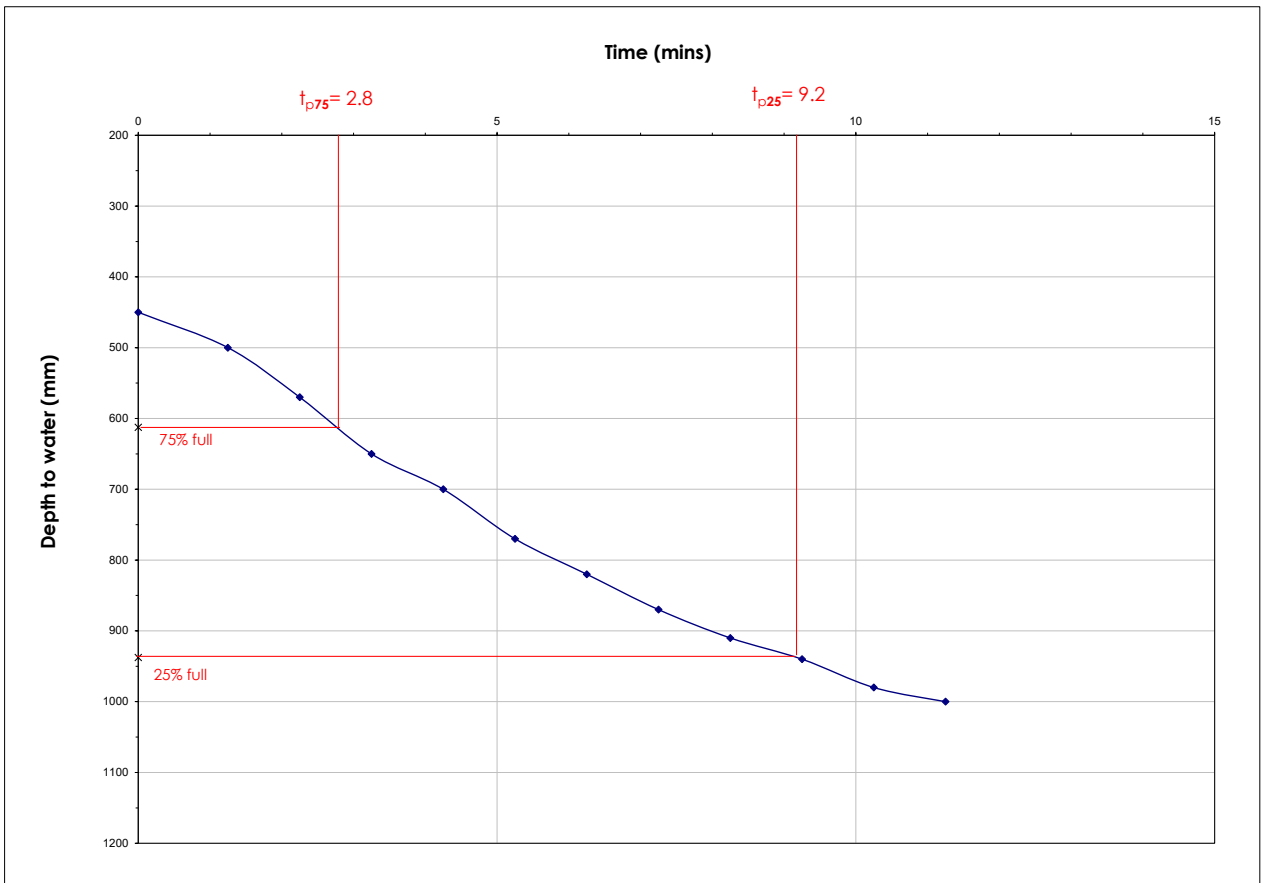
Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
15:18:45	0	0.45	450
15:20	1.25	0.50	500
15:21	2.25	0.57	570
15:22	3.25	0.65	650
15:23	4.25	0.70	700
15:24	5.25	0.77	770
15:25	6.25	0.82	820
15:26	7.25	0.87	870
15:27	8.25	0.91	910
15:28	9.25	0.94	940
15:29	10.25	0.98	980
15:30	11.25	1.00	1000

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.09	2090
Width	=	0.59	590
Depth	=	1.10	1100
Effective Depth (% full)		(mm)	(m)
0.25	=	937.5	0.94
0.50	=	775	0.78
0.75	=	612.5	0.61

Depth at start of test (mm)	=	450
Depth at end of test (mm)	=	1000

Base area of pit	=	1.2331
α_{p50} - 50% internal surface area inc. base	=	2.9751
V_{p75-25} - Volume 75 - 25%	=	0.4007575

Read from the graph:			
t_{p75} (min)	=	2.8	
t_{p25} (min)	=	9.2	



Soil infiltration rate, f , (m/s) = $3.51E-04$

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

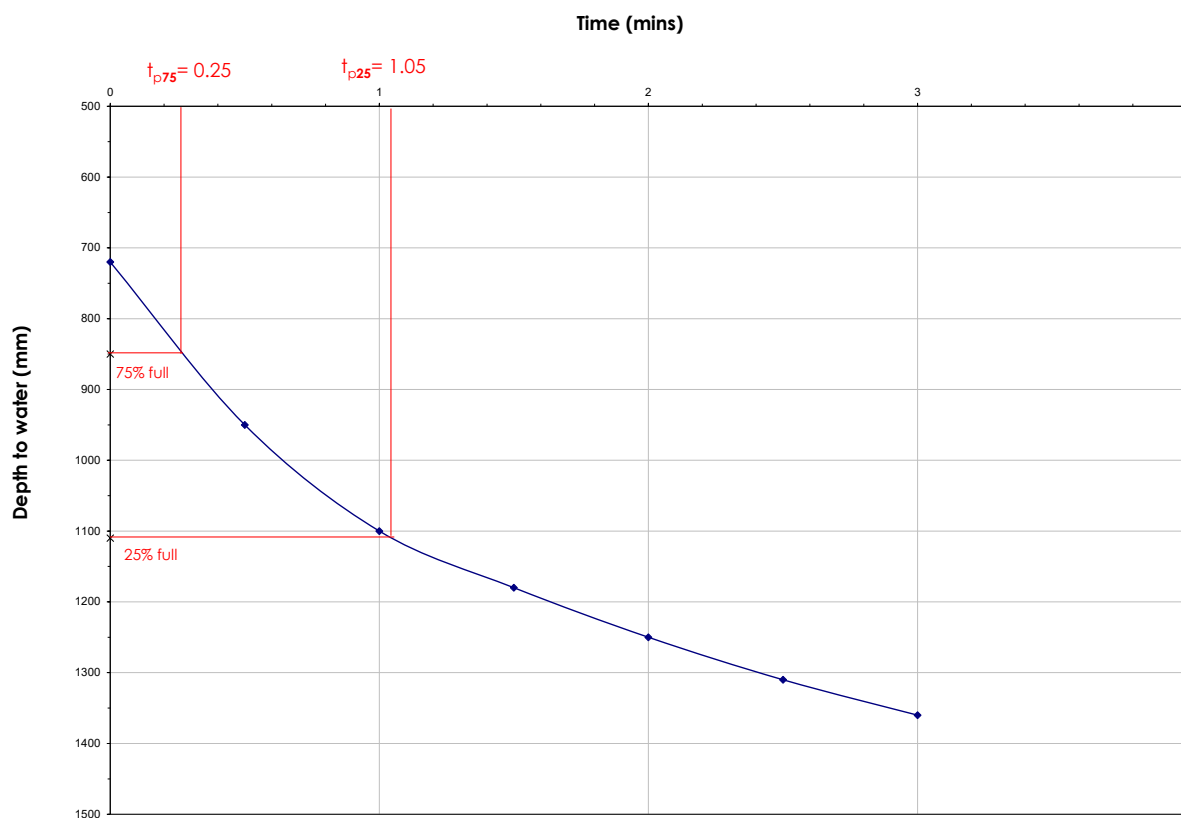
Date:	19/07/2022
Trial Pit No.	TP05
Test No.	1

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	1.81	1810
Width	=	0.59	590
Depth	=	1.24	1240
Effective Depth (% full)		(mm)	(m)
0.25	=	1110	1.11
0.50	=	980	0.98
0.75	=	850	0.85
Depth at start of test (mm)		=	720
Depth at end of test (mm)		=	1360

Base area of pit	=	1.0679
A_{p50} - 50% internal surface area inc. base	=	2.3159
V_{p75-25} - Volume 75 - 25%	=	0.277654

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.25
$t_{p\ 25}$ (min)	=	1.05



Soil infiltration rate, f , (m/s) = 2.50E-03

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

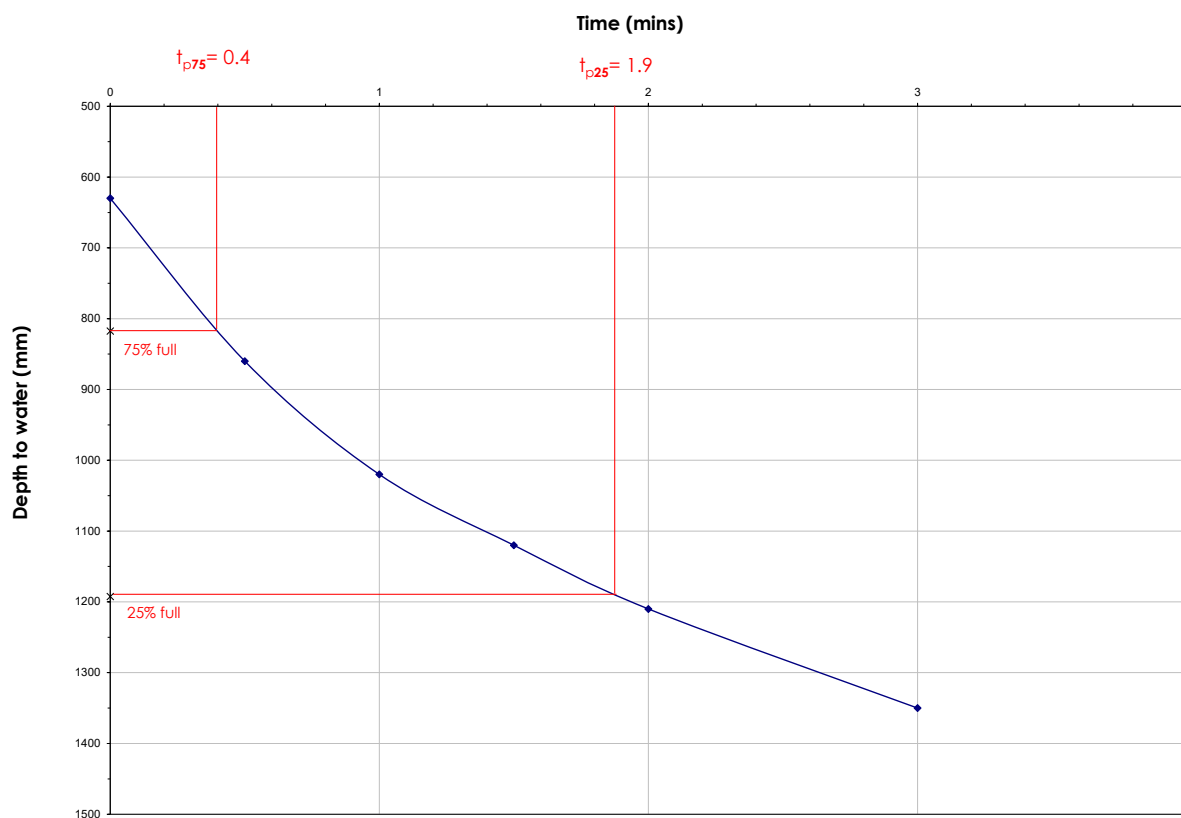
Date:	19/07/2022
Trial Pit No.	TP05
Test No.	2

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	1.81	1810
Width	=	0.59	590
Depth	=	1.38	1380
Effective Depth (% full)		(mm)	(m)
0.25	=	1192.5	1.19
0.50	=	1005	1.01
0.75	=	817.5	0.82
Depth at start of test (mm)		=	630
Depth at end of test (mm)		=	1350

Base area of pit	=	1.0679
A_{p50} - 50% internal surface area inc. base	=	2.8679
V_{p75-25} - Volume 75 - 25%	=	0.4004625

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.4
$t_{p\ 25}$ (min)	=	1.9



Soil infiltration rate, f , (m/s) = 1.55E-03

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

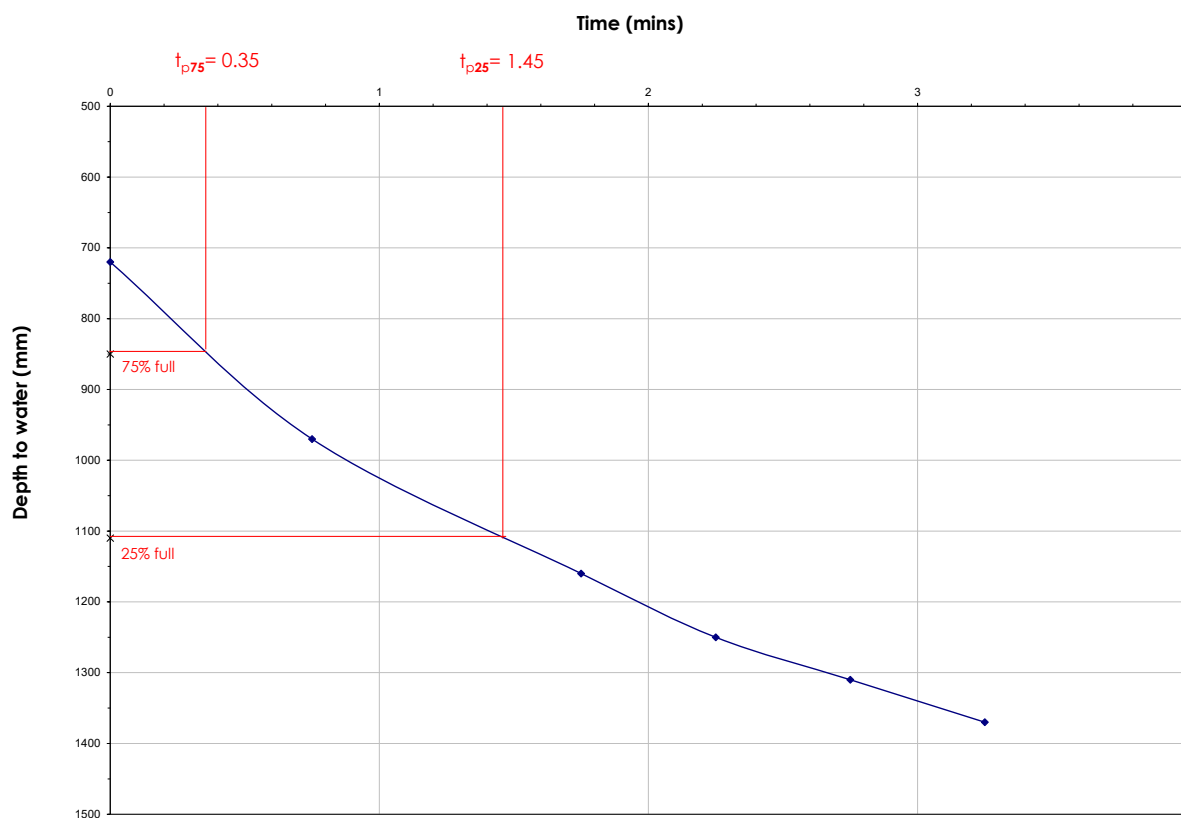
Date:	19/07/2022
Trial Pit No.	TP05
Test No.	3

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	1.81	1810
Width	=	0.59	590
Depth	=	1.24	1240
Effective Depth (% full)		(mm)	(m)
0.25	=	1110	1.11
0.50	=	980	0.98
0.75	=	850	0.85
Depth at start of test (mm)		=	720
Depth at end of test (mm)		=	1370

Base area of pit	=	1.0679
A_{p50} - 50% internal surface area inc. base	=	2.3159
V_{p75-25} - Volume 75 - 25%	=	0.277654

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.35
$t_{p\ 25}$ (min)	=	1.45



Soil infiltration rate, f , (m/s) = 1.82E-03

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473



Date:	20/07/2022
Trial Pit No.	TP09
Test No.	1

Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
09:05:30	0	0.65	650
09:07:00	1.5	0.67	670
09:08:00	2.5	0.69	690
09:09:00	3.5	0.70	700
09:10:00	4.5	0.71	710
09:11:00	5.5	0.72	720
09:16	10.5	0.77	770
09:21	15.5	0.82	820
09:27	21.5	0.86	860
09:33	27.5	0.91	910
09:49	43.5	1.03	1030
10:09	63.5	1.15	1150
10:16	70.5	1.18	1180
10:40	94.5	1.30	1300
11:08	122.5	1.41	1410
11:42	156.5	1.51	1510
11:51	165.5	1.52	1520

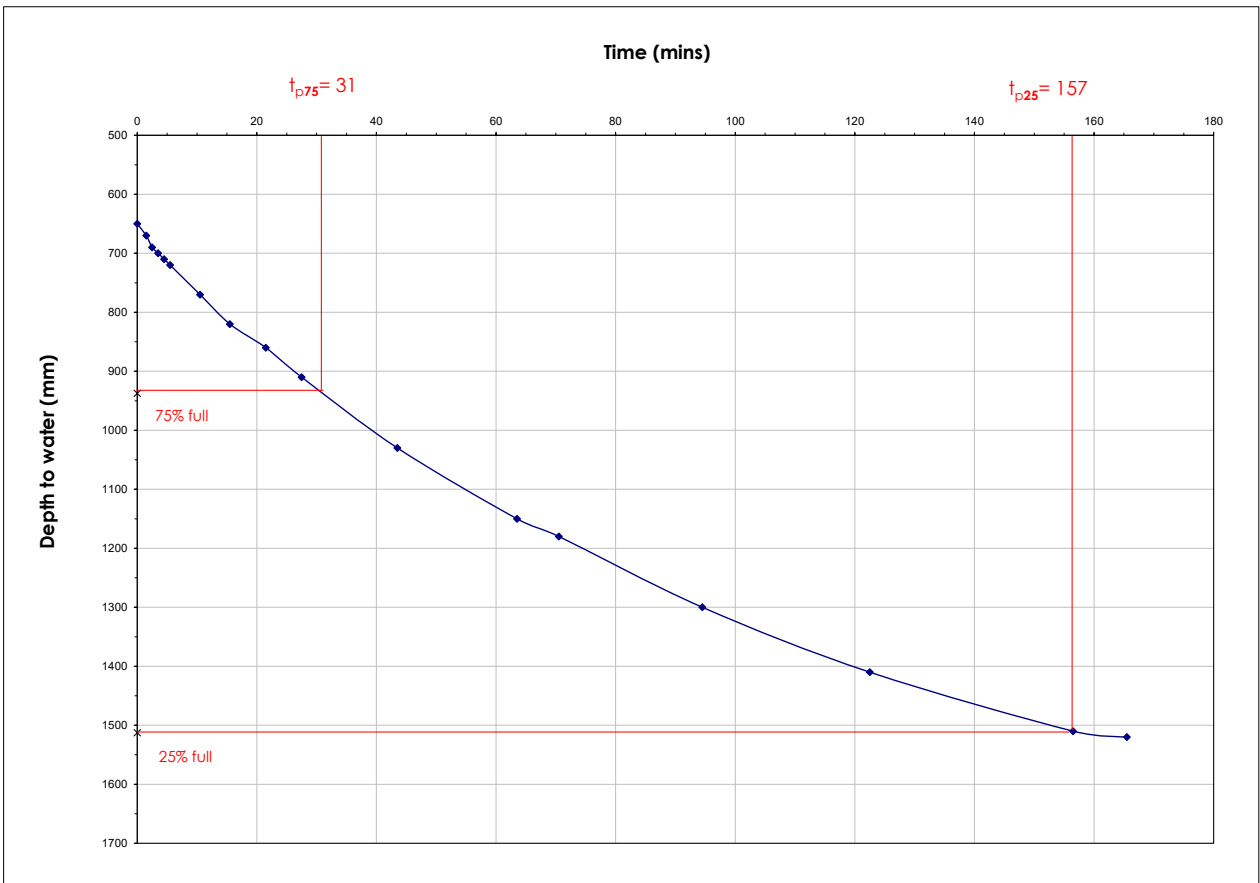
SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.12	2120
Width	=	0.60	600
Depth	=	1.80	1800

Effective Depth (% full)		(mm)	(m)
0.25	=	1512.5	1.51
0.50	=	1225	1.23
0.75	=	937.5	0.94

Depth at start of test (mm)	=	650
Depth at end of test (mm)	=	1520

Base area of pit	=	1.272
α_{p50} - 50% internal surface area inc. base	=	4.4
V_{p75-25} - Volume 75 - 25%	=	0.7314

Read from the graph:			
t_{p75} (min)	=	31	
t_{p25} (min)	=	157	



Soil infiltration rate, f , (m/s) = 2.20E-05

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473



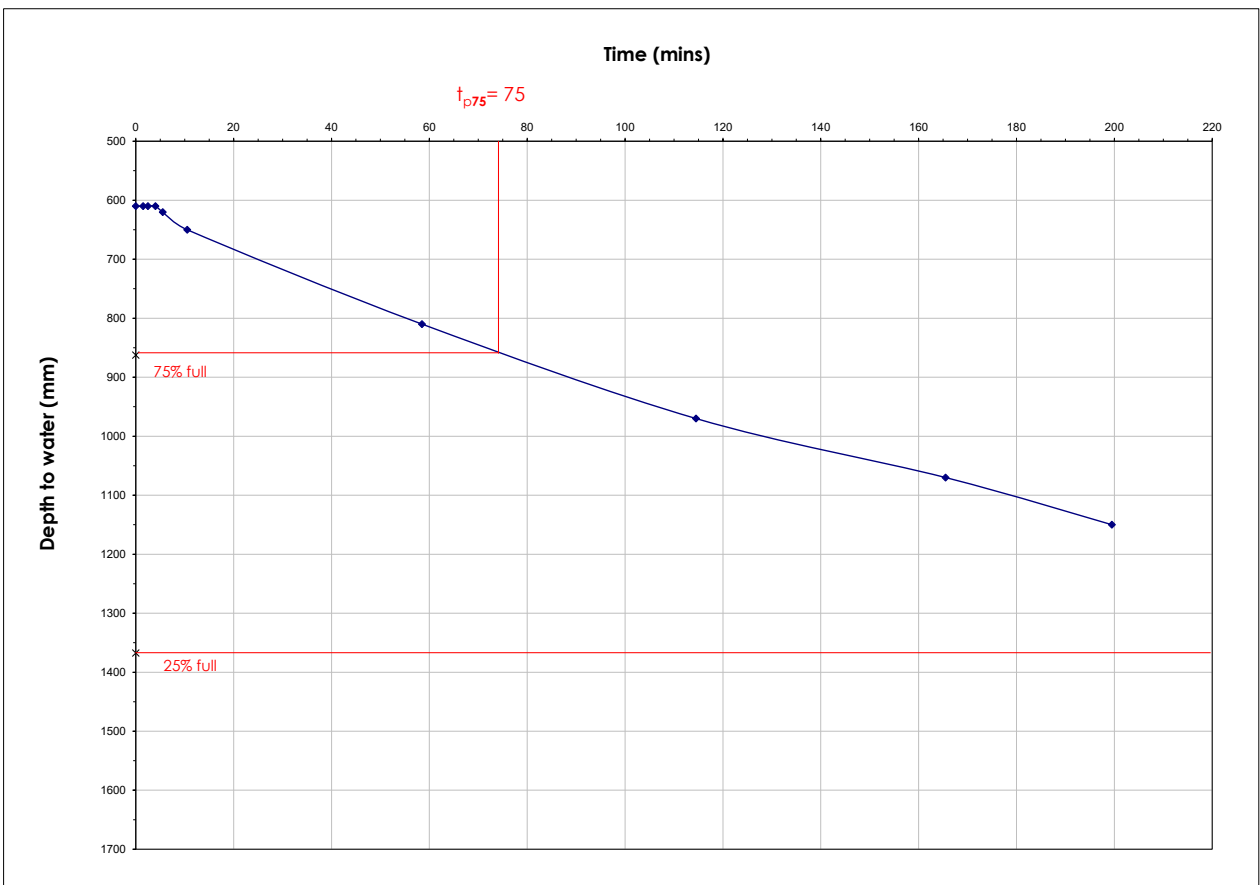
Date:	20/07/2022
Trial Pit No.	TP09
Test No.	2

Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
11:53:30	0	0.61	610
11:55:00	1.5	0.61	610
11:56:00	2.5	0.61	610
11:57:30	4	0.61	610
11:59:00	5.5	0.62	620
12:04:00	10.5	0.65	650
12:52	58.5	0.81	810
13:48	114.5	0.97	970
14:39	165.5	1.07	1070
15:13	199.5	1.15	1150

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.12	2120
Width	=	0.60	600
Depth	=	1.62	1620
Effective Depth (% full)		(mm)	(m)
0.25	=	1367.5	1.37
0.50	=	1115	1.12
0.75	=	862.5	0.86
Depth at start of test (mm)		=	610
Depth at end of test (mm)		=	1150

Base area of pit	=	1.272
a_{p50} - 50% internal surface area inc. base	=	4.0192
V_{p75-25} - Volume 75 - 25%	=	0.64236

Read from the graph:			
t_{p75} (min)	=	75	
t_{p25} (min)	=	n/a	



Test did not attain 25% Effective depth. Unable to calculate soil infiltration rate

LITHOS
CONSULTING

Client:	Ubrique Investments Limited
Engineer	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

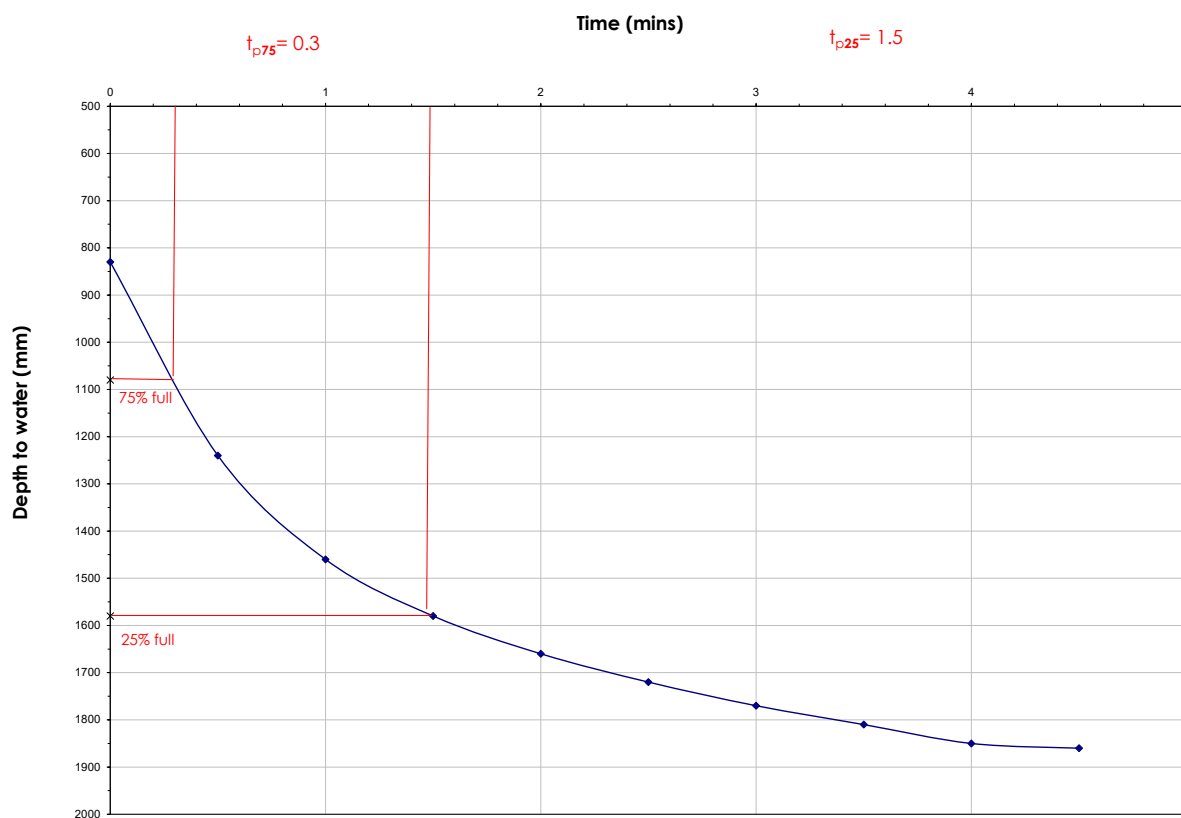
Date:	20/07/2022
Trial Pit No.	TP12
Test No.	1

[illegible]

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.21	2210
Width	=	0.60	600
Depth	=	1.83	1830
Effective Depth (% full)		(mm)	(m)
0.25	=	1580	1.58
0.50	=	1330	1.33
0.75	=	1080	1.08
Depth at start of test (mm)		=	830
Depth at end of test (mm)		=	1860

Base area of pit	=	1.326
A_{p50} - 50% internal surface area inc. base	=	4.136
V_{p75-25} - Volume 75 - 25%	=	0.663

Read from the graph:		
$t_{p\ 75}$ (min)	=	0.3
$t_{p\ 25}$ (min)	=	1.5



Soil infiltration rate, f , (m/s) = 2.23E-03

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473

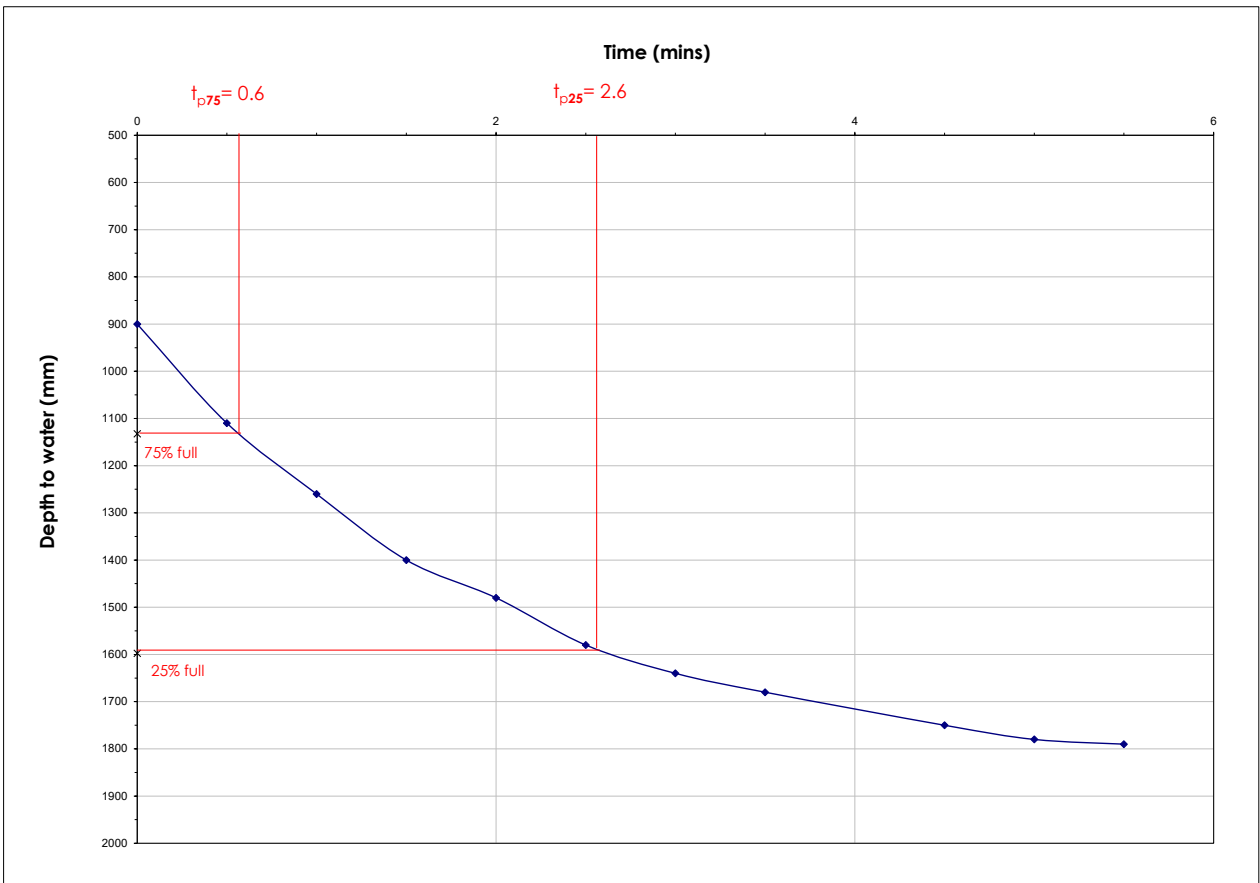


Date:	20/07/2022
Trial Pit No.	TP12
Test No.	2

Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
10:43:30	0	0.90	900
10:44:00	0.5	1.11	1110
10:44:30	1	1.26	1260
10:45:00	1.5	1.40	1400
10:45:30	2	1.48	1480
10:46:00	2.5	1.58	1580
10:46:30	3	1.64	1640
10:47:00	3.5	1.68	1680
10:48:00	4.5	1.75	1750
10:48:30	5	1.78	1780
10:49:00	5.5	1.79	1790

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.21	2210
Width	=	0.60	600
Depth	=	1.83	1830
Effective Depth (% full)		(mm)	(m)
0.25	=	1597.5	1.60
0.50	=	1365	1.37
0.75	=	1132.5	1.13
Depth at start of test (mm)		=	900
Depth at end of test (mm)		=	1790
Base area of pit		=	1.326
α_{p50} - 50% internal surface area inc. base		=	3.9393
V_{p75-25} - Volume 75 - 25%		=	0.61659

Read from the graph:			
t_{p75} (min)	=	0.6	
t_{p25} (min)	=	2.6	



Soil infiltration rate, f , (m/s) = 1.30E-03

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storches Hall, Kirkburton
Job No.:	4473

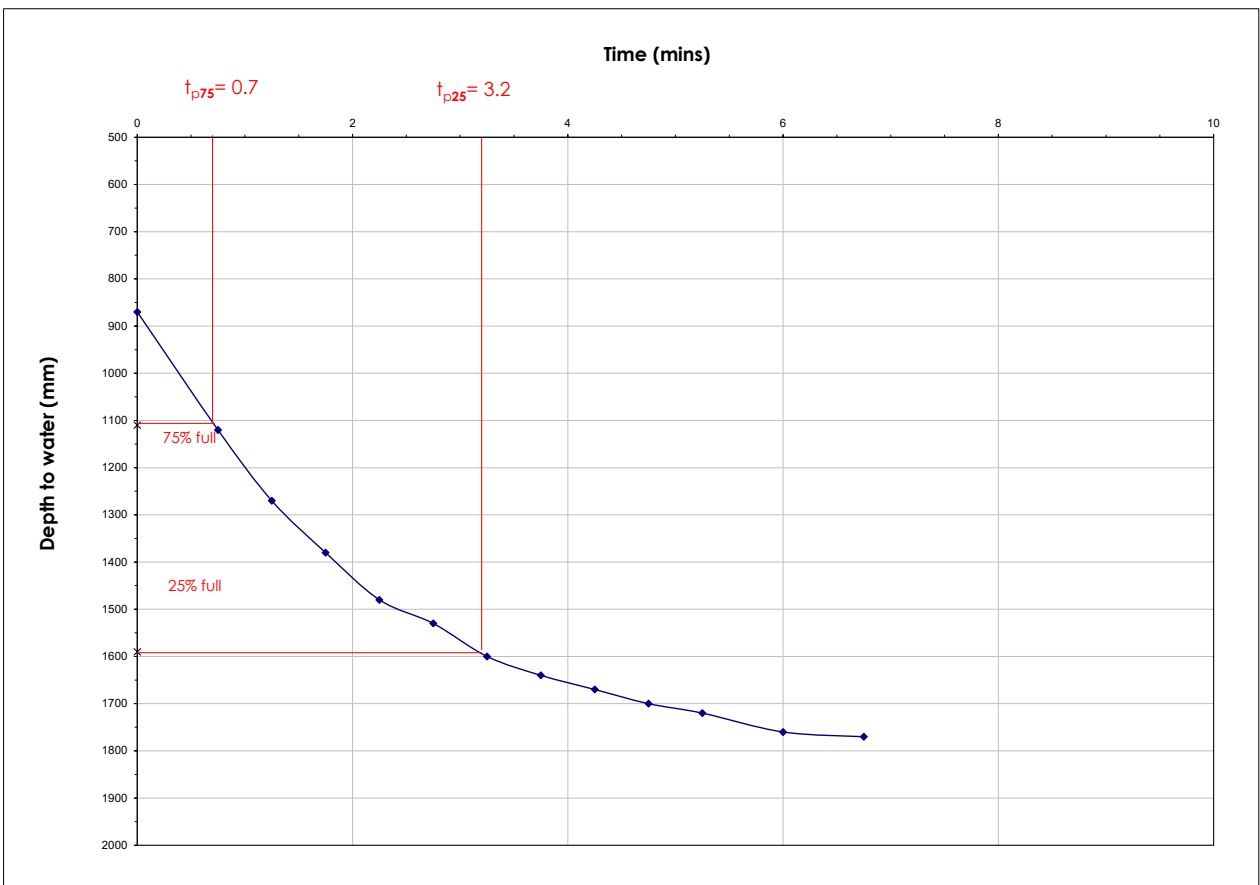


Date:	20/07/2022
Trial Pit No.	TP12
Test No.	3

Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
10:53:45	0	0.87	870
10:54:30	0.75	1.12	1120
10:55:00	1.25	1.27	1270
10:55:30	1.75	1.38	1380
10:56:00	2.25	1.48	1480
10:56:30	2.75	1.53	1530
10:57:00	3.25	1.60	1600
10:57:30	3.75	1.64	1640
10:58:00	4.25	1.67	1670
10:58:30	4.75	1.70	1700
10:59:00	5.25	1.72	1720
10:59:45	6	1.76	1760
11:00:30	6.75	1.77	1770

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.21	2210
Width	=	0.60	600
Depth	=	1.83	1830
Effective Depth (% full)		(mm)	(m)
0.25	=	1590	1.59
0.50	=	1350	1.35
0.75	=	1110	1.11
Depth at start of test (mm)		=	870
Depth at end of test (mm)		=	1770
Base area of pit		=	1.326
α_{p50} - 50% internal surface area inc. base		=	4.0236
V_{p75-25} - Volume 75 - 25%		=	0.63648

Read from the graph:			
t_{p75} (min)	=	0.7	
t_{p25} (min)	=	3.2	



Soil infiltration rate, f , (m/s) = 1.05E-03

SOIL INFILTRATION RATE IN ACCORDANCE WITH BRE DIGEST 365: 1991

Client:	Ubrique Investments Limited
Engineer:	Cameron Daniel
Job Name:	Storthes Hall, Kirkburton
Job No.:	4473



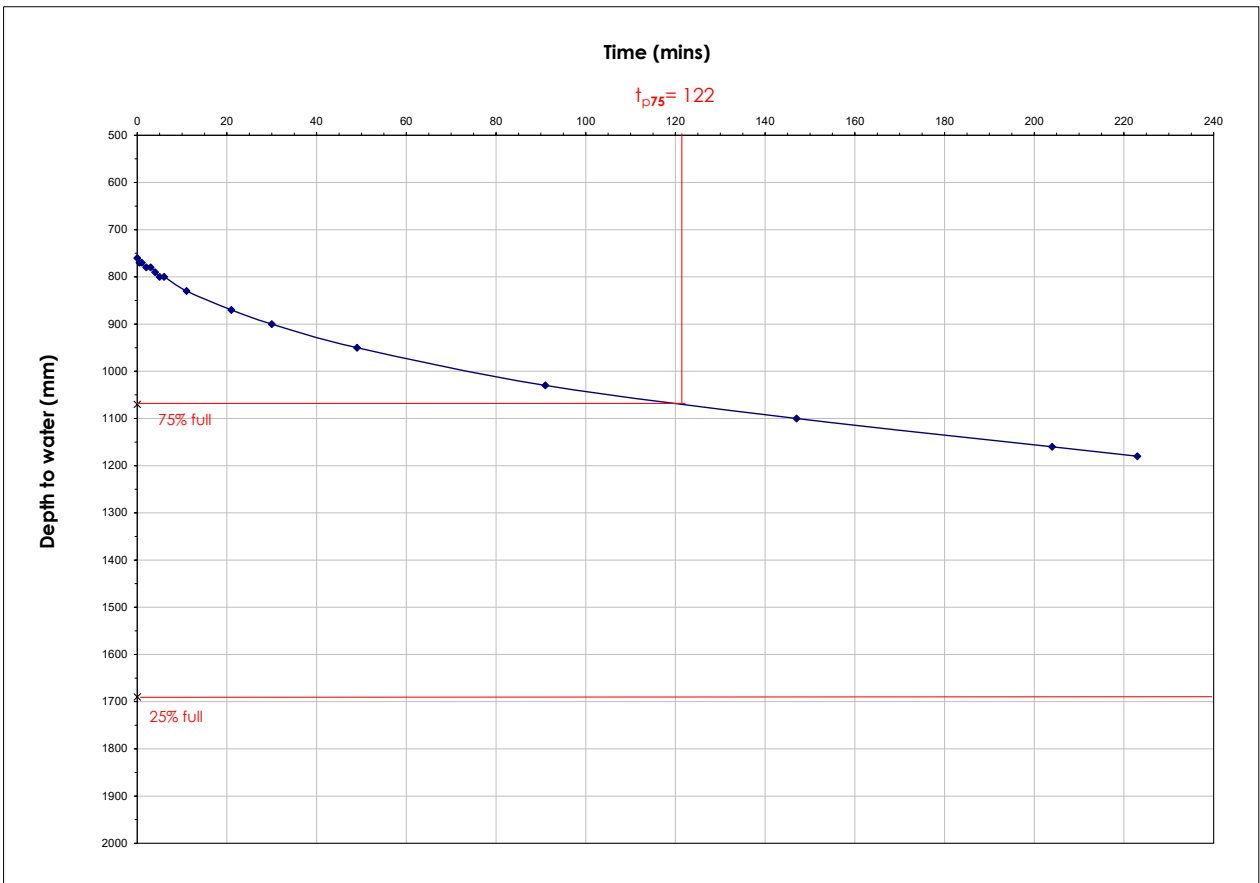
Date:	20/07/2022
Trial Pit No.	TP13
Test No.	1

Time	Elapsed Time	Depth to water from ground level	
	(min)	(m)	(mm)
11:18:00	0	0.76	760
11:18:30	0.5	0.77	770
11:19:00	1	0.77	770
11:20:00	2	0.78	780
11:21:00	3	0.78	780
11:22:00	4	0.79	790
11:23:00	5	0.80	800
11:24:00	6	0.80	800
11:29	11	0.83	830
11:39	21	0.87	870
11:48	30	0.90	900
12:07	49	0.95	950
12:49	91	1.03	1030
13:45	147	1.10	1100
14:42	204	1.16	1160
15:01	223	1.18	1180

SOAKAWAY TRIAL PIT			
Dimensions		(m)	(mm)
Length	=	2.05	2050
Width	=	0.60	600
Depth	=	2.00	2000
Effective Depth (% full)		(mm)	(m)
0.25	=	1690	1.69
0.50	=	1380	1.38
0.75	=	1070	1.07
Depth at start of test (mm)		=	760
Depth at end of test (mm)		=	1180

Base area of pit	=	1.23
a_{p50} - 50% internal surface area inc. base	=	4.516
V_{p75-25} - Volume 75 - 25%	=	0.7626

Read from the graph:			
t_{p75} (min)	=	125	
t_{p25} (min)	=	n/a	



Test did not attain 25% Effective depth. Unable to calculate soil infiltration rate