Jessica Riches

From: Charlie Cooper [redacted]
Sent: 12 March 2025 12:17
To: Sarah Burrow
Cc: Jessica Riches; Julson Delishaj; John.Longhorn@vistry.co.uk; Gardiner Hanson; Andrew Dennis; Matthew Richmond
Subject: F/14/24/RES & F/15/24/RES Supplementary Information
Attachments: 25-03-12 - Ford Airfield - Arun DC Response_enc.pdf

Good afternoon Sarah,

Hope all is well.

Following receipt of your recent comments in relation to the IRM and RM1 phases we wanted to provide the results of additional soakage testing conducted in the northern part of the site in December. This information was not received in time to provide as part of the December resubmission. We have included the latest soakage testing on a drawing along with all previous site investigation results and summarised the testing in the attached letter.

This is ahead of a meeting that I understand is being organised through Jess to discuss the drainage proposals.

If you have any immediate queries then please do give me a call but otherwise we hope we arrange a meeting in the next couple of weeks.

Kind regards
Charlie

Charlie Cooper
Associate Director

Please note my current working days are Monday, Tuesday, Wednesday and Thursday.

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Our Ref: CC/2205771

Sarah Burrow
Arun District Council
Civic Centre
Maltravers Rd
Littlehampton
West Sussex
BN17 5LF

12th March 2025

Dear Sarah

Ford Airfield – F/14/24/RES & F/15/24/RES Arun Drainage Officer Comments Response

Further to your responses dated 29 February 2025 and 10 March 2025, in relation to IRM and RM1 respectively, this letter provides supplementary information in relation to the latest geotechnical site investigations undertaken at the site, as well as our interpretation of this information, ahead of a requested meeting with yourself.

Geological Site Conditions

The site investigations show that the site is underlain primarily by Sandy Clay overlain in places with pockets of River Terrace Deposits (sand and gravel). This indicates that the infiltration potential across the site is likely to be generally poor but it may be that some areas within the site, associated with the superficial deposits, where localised may appear to be acceptable. However, infiltration into superficial deposits is not advisable as this can create localised groundwater flooding.

Site Investigation

Various site investigations, including groundwater monitoring and soakage testing, at the proposed development has been undertaken, from 2018 to 2024, to inform the design of the development and the surface water drainage design.

The testing locations were chosen to give a good spread across the site but with a specific focus on obtaining groundwater levels and infiltration rates in the vicinity of the proposed SuDS features. The findings of the site investigations undertaken are shown on enclosed Drg No. 2205773-1955.

The site investigation showed variable groundwater levels and infiltration rates across the site but notably high groundwater or poor infiltration rates at the locations of the proposed strategic SuDS basins (based on the approved outline drainage strategy (ref. Drainage Technical Note (ref: C85228-JNP-92-XX-RP-C-1004) dated 9 July 2021 by JNP Group). The variable levels and rates are characteristic of the underlying geology with good infiltration rates being associated with the pockets of sand and gravel within the site.

On the basis of further comments from the West Sussex County Council (WSCC), as the Lead Local Flood Authority (LLFA). Further infiltration testing was undertaken in the northern part of the site to inform the drainage proposals for the site in December 2024. The results of this investigation are enclosed with this letter.

We have enclosed drawing no. 2205773-1955 which shows our analysis of the infiltration constraints across the northern part of the site based on the site investigation undertaken to date. Whilst there are some areas where either reasonable soakage rates or deep groundwater levels suggest the possibility of infiltration, when viewed in combined the results indicate that groundwater levels have the potential to be very shallow in any areas where soakage rates are reasonable. Localised deeper groundwater levels are likely to be caused by small pockets of differing geology but infiltrating at these locations would be at high risk of causing localised groundwater issues when the soakage capacity of these pockets is exceeded. Given that the geological characteristics of the site are broadly consistent then it is prudent to consider the worst-case infiltration rates and groundwater levels to inform the drainage principles at the site, in order to ensure that risk of groundwater flooding does not increase within the site or elsewhere. It is our professional opinion that infiltration should not be taken forward as an option for draining any part of the development based on the identified constraints.

Notwithstanding the above, the worst-case groundwater readings taken at the locations of the SuDS features will be used to inform the design of these features (i.e. lining and flotation design).

Proposed Drainage Strategy

On the basis of the above, the proposed drainage strategy for the site has been designed to discharge all flows to the surrounding watercourse network (i.e. the second option of the drainage hierarchy within the Planning Practice Guidance). The proposed discharge rates have been limited to less than the Qbar rates (i.e.

greenfield runoff rates) based on the proposed impermeable areas as a conservative measure. This demonstrates that the proposed drainage strategy will result in a reduction in discharge rates, relative to the existing site conditions.

Natural Drainage Catchments

ADC have indicated that parts of the northern site drain to a low spot within the topography. This low is confirmed within the topographical survey but at a lower depth than ADC have indicated of around 400mm. Whilst runoff from parts of the site would flow towards this low spot, in the existing situation, in extreme events this would quickly overtop and water would flow in the natural direction of the catchment towards the watercourse. Given the high groundwater levels at this location it is likely that runoff from this catchment makes its way through the underlying geology to the watercourse.

The proposed drainage strategy limits the peak flow for the catchment to a rate of 13.3l/s from a Qbar rate of 78.2l/s for the natural catchment which is an 83% reduction on the rate. This offers a significant reduction on the rate of discharge and would manage any increase in volume by virtue of the minimal discharge rate.

We would like to request a meeting at your earliest convenience to discuss the above and agree a way forward for the drainage proposals for the site. Please let me know when you are available and we can arrange a meeting over Teams, or in person if preferred.

We trust the above is of assistance but do not hesitate to contact me if you would like to discuss further.

Yours sincerely

Charlie Cooper

Charlie Cooper
Associate Director

Encl: Ardent Drg No. 2205773-1955 Infiltration Constraints (RM1 and North IRM)
Omnia Infiltration Factual Report – Soakage Testing – 23rd December 2024

N

CLAYEY SAND (RIVER TERRACE DEPOSITS) FOUND STARTING AT DEPTHS BETWEEN 2.0-3.0m BGL

INFILTRATION RESULTS MIXED (LOW TO NULL)

GROUNDWATER WAS RECORDED AT 0.56m BGL AT ITS HIGHEST AND 3.05m BGL AT ITS LOWEST

SANDY/SILTY CLAY (BRICKEARTH) FOUND UP TO 3.0m DEPTHS. GENERALLY BECOMING STIFFER WITH DEPTH.

INFILTRATION RESULTS ARE MIXED:
- 3m bgl: VOID RESULTS (SA801)
- 0.4-1.5m bgl: LOW (T1, T2)

GROUNDWATER WAS RECORDED AT 0.99m bgl

CHALK ENCOUNTERED STARTING AT 2.0-3.0 m BGL

INFILTRATION RATES ARE LOW.

GROUNDWATER WAS RECORDED AT 0.24m BGL AT ITS HIGHEST

SANDY/SILTY CLAY (BRICKEARTH) FOUND UP TO 3.0m DEPTHS. GENERALLY BECOMING STIFFER WITH DEPTH.

INFILTRATION RESULTS ARE UNSUITABLE

INFILTRATION RATES ARE LOW TO VERY LOW

GROUNDWATER WAS RECORDED AT 1.27-1.44m BGL

INFILTRATION RESULTS UNSUITABLE

GROUNDWATER RECORDED AT 0.12m BGL

TP24
SA801
SOAKAGE TESTING 20/12/2024
RATE: NO RESULT
P1
HIGHEST GW LEVEL - 0.99m BGL
RECORDED ON 02/03/24
T1
SOAKAGE TESTING
SHALLOW- 7.93E-06
DEEP- 1.64E-06
T2
SOAKAGE TESTING
SHALLOW- 3.34E-06
DEEP- 1.55E-06
TP26
WS410
HIGHEST GW LEVEL - 0.56m BGL
RECORDED 18/02/24
T3
SOAKAGE TESTING
SHALLOW- NO RESULT
DEEP- 6.40E-07
SA806
SOAKAGE TESTING 20/12/2024
RATE: NO RESULT
T4
SOAKAGE TESTING 24/02/2024
SHALLOW- N/A
DEEP- 6.05E-05
SA804
SOAKAGE TESTING 20/12/2024
RATE: 5.84xE-06
TP28
WS411
HIGHEST GW LEVEL - 0.24m BGL
RECORDED 02/03/24
SA802
SOAKAGE TESTING 20/12/2024
RATE: NO RESULT
T5
SOAKAGE TESTING
SHALLOW- NO RESULT
DEEP- NO RESULT
TP25
WS409
HIGHEST GW LEVEL - 3.05m BGL
RECORDED ON 03/03/24
SA807
SOAKAGE TESTING 20/12/2024
RATE: 5.84E-06
BH6
HIGHEST GW LEVEL - 2.96m BGL
RECORDED IN FEB 2020
HIGHEST GW LEVEL - 2.06m BGL
RECORDED ON 03/03/24
DS6Z
HIGHEST GW LEVEL - 3.23m BGL
RECORDED IN FEB 2020
HIGHEST GW LEVEL - 1.86m BGL
RECORDED ON 02/03/24
SA805
SOAKAGE TESTING 20/12/202
RATE: NO RESULT
P4
HIGHEST GW LEVEL - 1.42m BGL
RECORDED ON 02/03/24
DS7Z
HIGHEST GW LEVEL - 3.02m BGL
RECORDED IN FEB 2020
HIGHEST GW LEVEL - 2.27m BGL
RECORDED ON 03/03/24
TP27
T6
SOAKAGE TESTING
SHALLOW- NO RESULT
DEEP- NO RESULT
T7
SOAKAGE TESTING
SHALLOW- 6.44E-06
DEEP- 1.39E-06
TP32
WS413
HIGHEST GW LEVEL - 2.36m BGL
RECORDED ON 03/03/24
SA808
SOAKAGE TESTING 20/12/2024
RATE: NO RESULT
TP31B
TP20
SA803
SOAKAGE TESTING 20/12/2024
RATE: NO RESULT
WS9
T11
SOAKAGE TESTING
SHALLOW- 1.58E-05
DEEP- 2.85E-06
TP33
TP37
T25
SOAKAGE TESTING
SHALLOW- 1.75E-05
DEEP- 1.08E-06
T25a
SOAKAGE TESTING
SHALLOW- N/A
DEEP- 7.86E-06
TP34
WS408
HIGHEST GW LEVEL - 0.95m BGL
RECORDED ON 03/03/24
T10
SOAKAGE TESTING
SHALLOW- 4.69E-07
DEEP- 3.01E-07
TP19
TP36
BH5
HIGHEST GW LEVEL - 3.21m BGL
RECORDED IN FEB 2020
HIGHEST GW LEVEL - 2.72m
RECORDED ON 03/03/24
T8
SOAKAGE TESTING
SHALLOW- 1.28E-05
DEEP- 9.85E-06
TP17
TP35
WS6
HIGHEST GW LEVEL - 2.03m BGL
RECORDED ON 05/01/24
T8a
SOAKAGE TESTING
SHALLOW- N/A
DEEP- 2.07E-07
WS8
HIGHEST GW LEVEL - 1.27m BGL
RECORDED ON 03/03/24
TP16
TP14
TP18
TP15
T9
SOAKAGE TESTING
SHALLOW- 6.43E-06
DEEP- 5.72E-06
T26
SOAKAGE TESTING
SHALLOW- N/A
DEEP-8.97E-06
WS403
HIGHEST GW LEVEL - 1.44m BGL
RECORDED ON 03/03/24
TP13
P12
HIGHEST GW LEVEL - 0.12m BGL
RECORDED ON 02/03/24
T12
SOAKAGE TESTING
SHALLOW- NO RESULT
DEEP- NO RESULT
TP12
WS412
HIGHEST GW LEVEL - 0.51m BGL
RECORDED 03/03/24
BH4
HIGHEST GW LEVEL - 2.20m BGL
RECORDED IN FEB 2020
HIGHEST GW LEVEL - 1.34m
RECORDED ON 02/03/24
BH3
HIGHEST GW LEVEL - 1.38m BGL
RECORDED IN FEB 2020
HIGHEST GW LEVEL - 0.86m BGL
RECORDED ON 02/03/24

0m 20m 100m
Scale: 1:2000 @ A1

KEY

- INFRASTRUCTURE BOUNDARY
- INFILTRATION TESTING LOCATIONS
- TRIAL PITS AND GROUNDWATER MONITORING LOCATIONS
- CONSTRAINTS - HIGH GROUNDWATER RECORDED
- CONSTRAINTS - POOR INFILTRATION

GENERAL NOTES:

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT SPECIFICATION AND ALL OTHER RELATED DRAWINGS ISSUED BY THE ENGINEER.
2. DO NOT SCALE FROM THIS DRAWING, WORK FROM FIGURED DIMENSIONS ONLY.
3. ALL DIMENSIONS SHOWN ON THIS DRAWING ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
4. ALL DIMENSIONS, LEVELS AND SURVEY GRID CO-ORDINATES ARE TO BE CHECKED ON SITE AND THE ENGINEER NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES PRIOR TO THE COMMENCEMENT OF THE WORKS.
5. NO DEVIATION FROM THE DETAILS SHOWN ON THIS DRAWING IS PERMITTED WITHOUT PRIOR PERMISSION FROM THE ENGINEER.
6. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY FULLY WITH THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, VOLUME ONE, SPECIFICATION FOR HIGHWAY WORKS AND THE LOCAL AUTHORITY, WEST SUSSEX COUNTY COUNCIL SPECIFICATION FOR ROAD CONSTRUCTION AND STANDARD DETAILS.

INFILTRATION TESTING NOTES - FEBRUARY 2020 TESTS:

1. INFILTRATION RATES BASED ON RSK LETTER REPORT 29228 INF/01. INFILTRATION TESTING WAS CARRIED OUT IN FEBRUARY 2020.
2. INFILTRATION TESTING WAS CARRIED OUT IN ACCORDANCE WITH BRE365.
3. ALL INFILTRATION RATES ARE EXPRESSED IN M/S.
4. SHALLOW TRIAL PITS DUG TO DEPTHS BETWEEN 0.50m-0.8m; DEEP TRIAL PITS DUG TO DEPTHS BETWEEN 1.0-3.0m.

INFILTRATION TESTING NOTES - DECEMBER 2024 TESTS:

1. INFILTRATION RATES BASED ON OMNIA LETTER REPORT A11918-8/241219/L1. INFILTRATION TESTING WAS CARRIED OUT IN DECEMBER 2024.
2. INFILTRATION TESTING WAS CARRIED OUT IN ACCORDANCE WITH BRE365.
3. ALL INFILTRATION RATES ARE EXPRESSED IN M/S.
4. SHALLOW TRIAL PITS DUG TO DEPTHS BETWEEN 0.50m-0.8m; DEEP TRIAL PITS DUG TO DEPTHS BETWEEN 1.0-3.0m.

Rev	Description	Drn	Chk	App	Date

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Client: VISTRY SOUTH EAST

Project Title: FORD AIRFIELD, ARUN

Drawing Title: INFILTRATION CONSTRAINTS (RM1 AND NORTHERN IRM)

A1 Scale	Date	Designed by
1:2000	06.03.2025	-
Drawn by	**Checked by**	**Approved by**
VL	VL	CC

Drawing Number: 2205773-1955 Rev -

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23rd December 2024 ref: A11918-8/241219/L1

Julson Delishaj
Vistry South East
Linden House,
Guards Avenue,
Caterham,
Surrey,
CR3 5XL

By Email: [redacted]

Dear Julson,

RE: Ford Airfield, Arun, West Sussex, BN17 5QZ – Infiltration Factual Report – Soakage Testing

Omnia were commissioned by Vistry South East, to undertake additional soakage testing in full accordance with BRE Digest 365 – Soakaway Design at the above referenced site. Please find set out below a summary of on-site observations from site works undertaken from Monday 16th December 2024 to 19th December 2024, including presentation of infiltration rates.

Yours sincerely,

[redacted]

Abbie Dodds
Geo-Environmental Consultant

[redacted]

Olivia Maxwell
Principal Geo-Environmental Consultant

Attachments:
Appendix I: Limitations
Appendix II: Figures
Appendix III: Logs
Appendix IV: In-situ Soakaway Certificates
Appendix V: Drainage Scheme (Drawing ref: 2205771-D075)

Quality Assurance

Project Number: A11918-8 December 2024						
Geo-Environmental	**Infiltration Testing Letter Report**					
	Prepared by:	A. Dodds	**Date:**	19/12/2024	**Signature:**	[redacted]
	Reviewed and authorised by:	O. Maxwell	**Date:**	24/12/2024	**Signature:**	[redacted]

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Portsmouth
PO6 4TY

[redacted]

Site Address	Ford Airfield, Arun, West Sussex, BN17 5QZ
National Grid Reference	499156, 103169

1.0 BACKGROUND

Omnia have been commissioned by Vistry South East to undertake additional soakaway testing at the site of Ford Airfield, Arun, West Sussex, BN17 5QZ. Multiple previous phases of investigation have been undertaken for the site to date (by RSK, Omnia and others). Additional soakaway testing works have been commissioned by the client to obtain further information within the northern area of the site. This is in order to support the planning application as discussed with Omnia and presented in an email on the 25th November 2024.

The area of investigation was located between the villages of Ford and Yapton in West Sussex, with the wider site boundary approximately 90 hectares in size. The southern parcel of land was 32.43 ha, and the northern parcel 30.63 ha. This additional soakage testing was focussed within the northern parcel of land.

The land is predominantly used for agricultural purposes, however commercial premises are also located on the site including the former highways yard towards the north of the site.

The site was bordered by a mixture of residential to the south and west and commercial/open fields to the south, east and north.

It is understood outline planning application F/4/20/OUT has been granted with conditions for the development of "*up to 1,500 dwellings (Use Class C3), 60-bed care home (Use Class C2), up to 9,000 sqm of employment floorspace (Use Classes B1), local centre of up to 2,350 sqm including up to 900 sqm retail / commercial (Use Classes A1-A5) and 1,450 sqm community / leisure floorspace (Use Classes D1-D2), land for a two-form entry primary school (Use Class D1), public open space, allotments, new sports pitches and associated facilities, drainage, parking and associated access, infrastructure, landscape, ancillary and site preparation works, including demolition of existing buildings and part removal of existing runway hardstanding*"

The soakage testing was completed within gravel soak cells which were set up during a previous phase of ground investigation between the 3rd of December 2024 and the 4th of December 2024. Infiltration testing was then undertaken from Monday 16th December 2024 to Thursday 19th December 2024. The soakaway test locations were specified by the drainage engineers for the scheme (Ardent) as presented within drawing reference 2205771-D075 dated November 2024. Locations are presented as Figure 3.0 in Appendix II.

2.0 GEOLOGY & HYDROGEOLOGY

The British Geological Survey (BGS) map for the site, Fareham (Chichester & Bognor, Sheets 317/332, Solid and Drift Edition at a scale of 1:50,000 dated 1996) indicates that the site is underlain by the following geological sequence:

Table 2-1 Geological sequence on-site

Geological Unit	Formation Name	Description	Aquifer Classification
Superficial	Brickearth	Sand, silt and clay	Secondary A
	River Terrace Deposits	Sand and gravel	
Bedrock	Upper Chalk (Lewes Nodular Chalk, Seaford chalk, Newhaven chalk, Culver chalk and Portsdown chalk)	Chalk	Principal

3.0 GROUND CONDITIONS ENCOUNTERED

Geology encountered on site generally corresponds with that highlighted within BGS Mapping. The findings of the investigation have been outlined below.

3.1 Topsoil

Topsoil was encountered within six (6no.) exploratory hole locations (SA801, SA802, SA804, SA805, SA806, SA807), to a maximum depth of 0.50m bgl (SA802). The Topsoil generally comprised soft brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. The base of the Topsoil was proved within all locations.

3.2 Made Ground

Made Ground was encountered within two (2no.) exploratory hole locations (SA803 and SA808), to a depth of 0.30m bgl (SA808) and 0.60m bgl (SA803). The Made Ground generally comprised soft dark brown gravelly clayey SILT. Gravel is angular to sub-rounded fine to coarse flint and brick.

3.3 Superficial Deposits

3.3.1 Brickearth

Soils attributed to the Brickearth Formation were encountered within all locations (SA801-SA808) directly beneath the Made Ground or Topsoil to a maximum observed depth of 3.00m bgl (SA802 and SA805) although the base of the strata was not proven within either of the locations (SA802 and SA805). The Brickearth generally comprised soft to firm orangeish brown slightly sandy silty CLAY. Sand is fine to coarse.

3.3.2 River Terrace Deposits

Soils attributed to the River Terrace Deposits were encountered within five (5no.) locations (SA801, SA803, SA804, SA806 and SA808) directly beneath the Brickearth from a depth range of 1.90-2.70m bgl to a maximum observed depth of 3.00m bgl although the base of the strata was not proven within any of the locations. The River Terrace Deposits comprised yellowish brown gravelly silty fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint and occasional chalk.

3.4 Bedrock Deposits – Upper Chalk

Soils attributed to the Upper Chalk were only encountered within one location (SA807) directly beneath the Brickearth from a depth of 2.20m bgl to a maximum observed depth of 3.00m bgl although the base of the strata was not proven. It was recovered as structureless chalk composed

of soft light yellowish brown very gravelly sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse weak low density off white with black specks chalk and occasionally flint.

The base of the bedrock deposits was not encountered during this investigation.

3.5 Groundwater Conditions

Groundwater was not encountered within any intrusive location.

Exploratory hole logs are included within Appendix III of this report.

4.0 BRE DG365 Soakaway Testing

Soakaway testing was undertaken in full accordance with BRE DG365 between 16th December and 19th December 2024 within SA801-SA808.

The soakaway test certificates, including full time and depth data, are included within Appendix IV with the test results summarised in Table 5.1.

Table 4-1 Summary of Infiltration rate

Location	Test Number	Pit Dimensions (L x W x D)	Depth to fill (m bgl)	Strata Type	Duration of Test (hrs:mins)	Infiltration Rate (m/s)
SA801	1	2.00x0.40x3.00	1.81	Clay	24:00	N/A
SA802	1	2.00x0.40x3.00	1.49	Clay	24:36	N/A
SA803	1	2.00x0.45x3.00	1.88	Sand	24:15	N/A
SA804	1	2.10x0.50x3.00	1.85	Clay/Sand	00:22	$5.84x10^{-6}$
	2		1.82		00:34	$3.01x10^{-5}$
	3		1.80		00:52	$1.80x10^{-5}$
SA805	1	2.00x0.50x3.00	0.77	Clay	24:07	N/A
SA806	1	2.20x0.40x3.00	1.79	Clay/Sand	24:00	N/A
SA807	1	2.10x0.50x3.00	1.88	Clay/Chalk	00:35	$2.85x10^{-5}$
	2		1.84		01:07	$1.56x10^{-5}$
	3		1.85		02:00	$7.25x10^{-6}$
SA808	1	2.20x0.50x3.00	1.75	Clay/Sand	24:17	N/A

Testing was undertaken within SA801, SA802, SA803, SA805, SA806 and SA808 over a duration of 24hrs, during this period, the required 25% effective storage depth intercept was not reached. All six (6no.) locations (SA801, SA802, SA803, SA805, SA806 and SA808) were left to run for a duration of 24:00 (hours: minutes) therefore, all six (6no.) tests (SA801, SA802, SA803, SA805, SA806 and SA808) are considered to be unsuccessful.

Testing was undertaken within SA804 and SA807 over a duration of 00:22– 01:07 (hours: minutes). During these periods, the required 25% and 75% effective storage depth intercepts were reached within SA804 and SA807 such that the tests were considered to be successful, providing soil infiltration rates ranging from $5.84x10^{-6}$ to $3.01x10^{-5}$m/s.

Three (3no.) successful tests were undertaken in each of the successful trial pits in succession to ensure full saturation of surrounding soils, with all reaching the 25% and 75% effective storage depth intercepts. The results indicate low permeability soil with good drainage conditions.

Given the 'good' infiltration rates (Carter, 1991) within the near surface River Terrace deposits and bedrock deposits of Upper chalk at 2no. locations, the site may prove suitable for conventional soakaway design within locations SA804 and SA807.

It is recommended that the calculated infiltration rates are provided to a suitably qualified drainage engineer. The application of soakaway drainage will ultimately be dependent on the specific requirements of the development. All soakaways should be designed in accordance with BRE Special Digest 365-Soakaway Design.

5.0 DISCUSSION & CONCLUSIONS

During the soakaway testing, the 75% and 25% effective storage depths were reached in two (2no.) out of the eight (8no.) soakaway test locations, and as a result soil infiltration rates were able to be calculated and ranged from $5.84x10^{-6}$ to $3.01x10^{-5}$m/s indicating low permeability soil with good drainage conditions.

However, six (6no.) locations (SA801, SA802, SA803, SA805, SA806, SA808) failed to reach the 25% effective storage depths and as a result soil infiltration rates could not be calculated. This is attributed to the cohesive nature of the fine-grained material of the superficial deposits of Brickearth and River Terrace Deposits.

It is considered that the site may be suitable for conventional soakaway design, and it is recommended that a qualified drainage engineer is provided with the results of this testing for further discussion.

The application of soakaway drainage will ultimately be dependent on the specific requirements of the development. All soakaways should be designed in accordance with BRE Special Digest 365-Soakaway Design.

END OF REPORT

APPENDIX I

LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between OE Ltd and the Client as indicated in Section 1.2.

2. For the work, reliance has been placed on publicly available data obtained from the sources identified. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information, it has been assumed it is correct. No attempt has been made to verify the information.

3. This report has been produced in accordance with current UK policy and legislative requirements for land and groundwater contamination, which are enforced, by the local authority and the Environment Agency. Liabilities associated with land contamination are complex and requires advice from legal professionals.

4. During the site walkover reasonable effort has been made to obtain an overview of the site conditions. However, during the site walkover no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown, or the location of the area has not been made known or accessible.

5. Access considerations, the presence of services and the activities being carried out on the site limited the locations where sampling locations could be installed and the techniques that could be used.

6. Site sensitivity assessments have been made based on available information at the time of writing and are ultimately for the decision of the regulatory authorities.

7. Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials this is for indicative purposes only and do not constitute or replace full and proper surveys.

8. The executive summary, conclusions and recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon without considering the context of the report in full.

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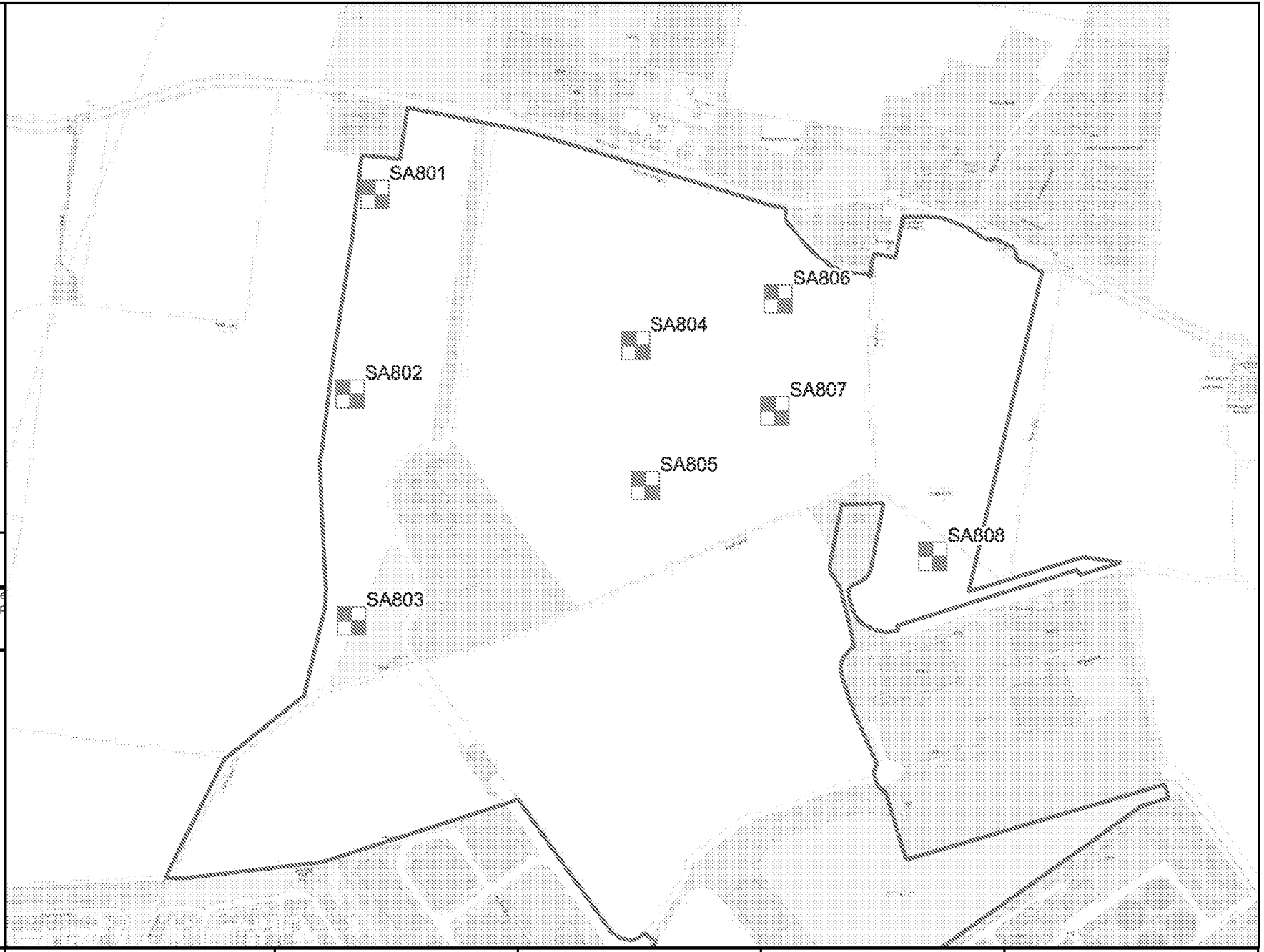
APPENDIX II

FIGURES

Key

Whole Site Boundary

Soakaway Locations



0 50 100 150 200 m

Scale	Paper Size
1:5,300	A4

Omnia Consulting, Suite 1 Pure Offices, One Port Way, Port Solent, Portsmouth, PO6 4TY
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ARUN DISTRICT COUNCIL F/15/24/RES

Job Title:	Client:	Project Number:	Date:	Drawing Title:
Ford Airfield - Additional Soakaways	Vistry Housebuilding South East	A11918-8	20/12/2024	Figure 3.0 Intrusive Location Plan
		Drawn By: A. Dodds	Authorised By: O. Maxwell	

APPENDIX III

INTRUSIVE LOGS

Trial Pit Log

Trialpit No **SA801**

Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 498824.93 - 103850.95 Level: 6.75	Date 12/03/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2 / 0.4	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Soft brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
				0.30	6.45		
	0.50 - 1.00	B					Soft dark orangeish brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
				1.40	5.35		
	1.50 - 2.00	B					Soft to firm orangeish brown slightly sandy silty CLAY. Sand is fine to coarse [BRICKEARTH].
							From 2.40m bgl: becomes very sandy
	2.50 - 2.70	B					
	2.70 - 3.00	B		2.70	4.05		Orange and yellow silty fine to coarse SAND. [RIVER TERRACE DEPOSITS]
				3.00	3.75		End of pit at 3.00 m

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

OMNIA

Trial Pit Log

Trialpit No
SA802
Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 498803.41 - 103653.05 Level: 6.61	Date 12/03/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2 / 0.4	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Soft brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
	0.50 - 1.00	B		0.50	6.11		Soft to firm orangeish brown mottled light greyish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
							From 1.30m bgl: becoming slightly gravelly very sandy. Gravel is sub-angular to sub-rounded fine to coarse flint.
	1.50 - 2.00	B					
	2.50 - 3.00	B					
				3.00	3.61		End of pit at 3.00 m

1
2
3
4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

Trial Pit Log

OMNIA

Trialpit No **SA803** Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 498801.56 - 103432.80 Level: 7.22	Date 12/03/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2 / 0.45	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Soft dark brown slightly gravelly clayey SILT with rootlets and rare brick cobbles. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]
							Between 0.45-0.60m bgl: On south side of pit was a lens of black sandy very gravelly SILT. Gravel is angular to sub-angular fine to coarse flint, brick and macadam.
	0.60 - 1.00	B		0.60	6.62		Soft dark orangeish brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
	1.50 - 1.90	B		1.50	5.72		Soft to firm orange brown mottled light greyish brown silty very sandy CLAY. Sand is fine to coarse. [BRICKEARTH]
	2.00 - 2.50	B		1.90	5.32		Orange brown silty fine to coarse SAND. [RIVER TERRACE DEPOSITS]
	2.50 - 2.90	B		2.50	4.72		Orange brown silty gravelly fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint. [RIVER TERRACE DEPOSITS]
				2.90	4.32		Yellowish brown silty fine to coarse SAND. [RIVER TERRACE DEPOSITS]
				3.00	4.22		End of pit at 3.00 m

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

Trial Pit Log

Trialpit No **SA804**

Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 499081.96 - 103700.11 Level: 7.19	Date 12/04/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2.1 × 0.5	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine and medium flint. [TOPSOIL]
				0.40	6.79		Soft dark orangeish brown silty CLAY. [BRICKEARTH]
				1.60	5.59		Soft to firm orangeish brown and occasional mottled light brown slightly sandy silty CLAY with rare sub-angular to sub-rounded fine to coarse flint gravel. [BRICKEARTH]
				2.30	4.89		Yellowish brown gravelly silty fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint and white with black specks, weak, low density chalk. [RIVER TERRACE DEPOSITS]
				3.00	4.19		End of pit at 3.00 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

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Trial Pit Log

Trialpit No
SA805
Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 499090.72 - 103563.88 Level: 6.94	Date 12/04/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2 / 0.5	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30	6.64		Soft brown slightly gravelly silty CLAY with rootlets. [TOPSOIL]
				1.30	5.64		Soft dark orangeish brown silty CLAY [BRICKEARTH]
				3.00	3.94		Soft to firm orangeish brown mottled light greyish brown slightly sandy silty CLAY. [BRICKEARTH]
							End of pit at 3.00 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

Trial Pit Log

Trialpit No **SA806**

Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 499223.29 - 103746.27 Level: 6.50	Date 12/04/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2.2 × 0.4	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Soft dark brown silty CLAY with rootlets. [TOPSOIL]
				0.30	6.20		Soft dark orangeish brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
				1.20	5.30		Soft to firm orangeish brown mottled light brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH] *From 1.50m bgl: rare cobbles of sub-rounded flint and becoming sandy.*
				2.10	4.40		Orange slightly gravelly clayey fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint. [RIVER TERRACE DEPOSITS]
				3.00	3.50		End of pit at 3.00 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

Trial Pit Log

OMNIA

Trialpit No **SA807** Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 499218.02 - 103635.02 Level: 5.91	Date 12/04/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2.1 × 0.5	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.40	5.51		Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
				0.80	5.11		Soft dark orangeish brown silty CLAY. [BRICKEARTH]
				2.20	3.71		Soft orangeish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
				3.00	2.91		Recovered as structureless chalk composed of Soft light yellowish brown very gravelly sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse weak low density off white with black specks chalk and occasionally flint. Presumed grade is Dm. [LEWES NODULAR CHALK]
							End of pit at 3.00 m

1 2 3 4

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

Trial Pit Log

OMNIA

Trialpit No **SA808** Sheet 1 of 1

Project Name: Ford Airfield	Project No. A11918-8	Co-ords: 499373.48 - 103494.59 Level: 6.55	Date 12/04/2024
Location: Northern Grainstore, Ford Airfield Industrial Estate, Ford, Arundel BN18 0HY	Dimensions (m): Depth 3.00	2 / 0.5	Scale 1:20
Client: Vistry South East			Logged JW

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							Soft dark brown gravelly clayey SILT. Gravel is angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]
				0.30	6.25		Soft dark orangeish brown silty CLAY. [BRICKEARTH]
				1.90	4.65		Soft orangeish brown mottled yellowish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
				2.30	4.25		Orange silty fine to coarse SAND. [RIVER TERRACE DEPOSITS] *From 2.50m bgl: becomes slightly gravelly. Gravel is sub-angular to sub-rounded fine to coarse flint.*
				3.00	3.55		End of pit at 3.00 m

Remarks: 1. Position scanned with calibrated CAT & 'Genny' prior to excavation. 2. No groundwater encountered.

Stability: STABLE

AGS

APPENDIX IV

SOAKAWAY TESTING CERTIFICATES

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	16/12/2024

Trial Pit Identification:	SA801
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.40
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

Geology Description:

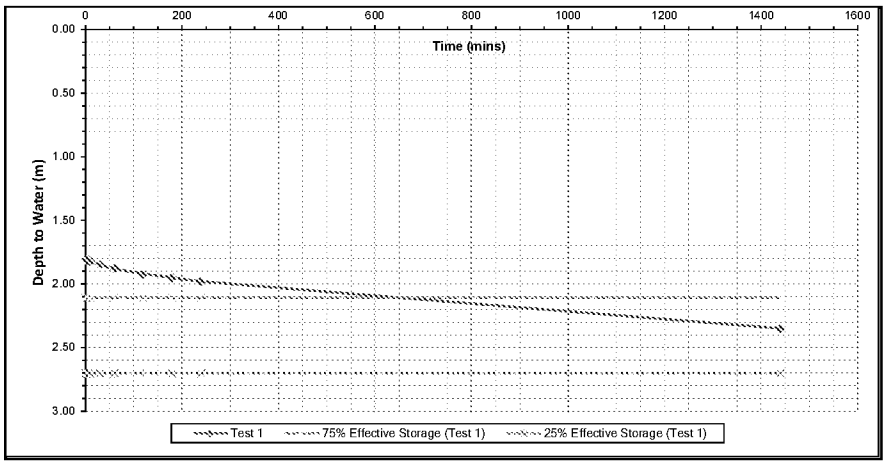
0.00-0.30m bgl Soft brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
0.30-1.40m bgl Soft dark orangeish brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
1.40-2.70m bgl Soft to firm orangeish brown slightly sandy silty CLAY. Sand is fine to coarse [BRICKEARTH].
From 2.40m bgl: becomes very sandy
2.70-3.00m bgl Orange and yellow silty fine to coarse SAND. [RIVER TERRACE DEPOSITS]

Test Parameters	**TEST 1**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.19	0.00	1.81
	1.00	1.81
75% Effective Storage Depth (m):	2.00	1.81
0.89	3.00	1.81
	4.00	1.81
(i.e. Depth Below Ground Level) (m):	5.00	1.81
2.11	10.00	1.82
	30.00	1.85
25% Effective Storage Depth (m):	60.00	1.88
0.30	120.00	1.92
	180.00	1.95
(i.e. Depth Below Ground Level) (m):	240.00	1.98
2.70	1440.00	2.35
Effective Storage Depth Across 75% - 25% (m):		
0.60		
Time to Fall to 75% Effective Depth (min):		
650		
Time to Fall to 25% Effective Depth (min):		
N/A		
30%(Vp75%-25%) (m3):		
0.14		
As50% (m2):		
3.66		
Tp75%-25% (mins):		
N/A		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**N/A**

Comments:

NOTE: During the duration of the test the required intercept failed to be reached. Therefore the test is considered not to have been successful.



Site Engineer:	**Date:**
Oakland	16/12/2024

Checked and Approved By:	**Date:**
HS	19/12/2024

Location
SA801

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	16/12/2024

Trial Pit Identification:	SA802
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.40
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

Geology Description:

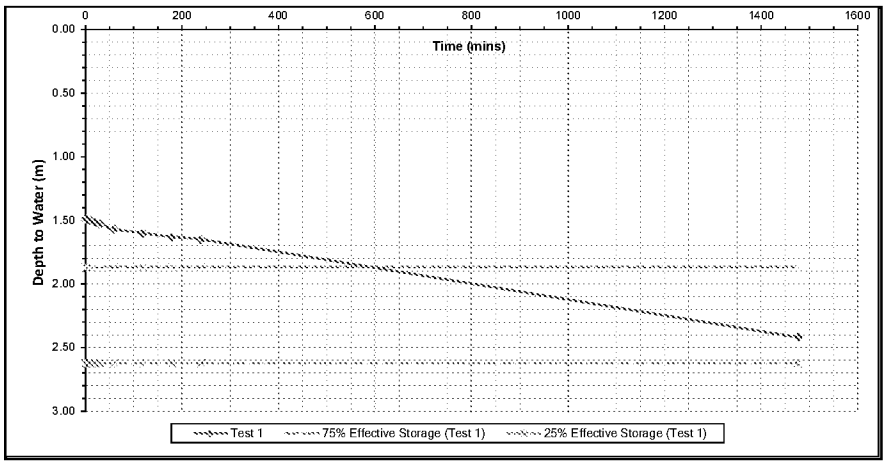
0.00-0.50m bgl Soft brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
0.50-3.00m bgl Soft to firm orangeish brown mottled light greyish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
From 1.30m bgl: becoming slightly gravelly very sandy. Gravel is sub-angular to sub-rounded fine to coarse flint.

Test Parameters	TEST 1	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.51	0.00	1.49
	1.00	1.49
75% Effective Storage Depth (m):	2.00	1.49
1.13	3.00	1.49
	4.00	1.49
(i.e. Depth Below Ground Level) (m):	5.00	1.49
1.87	10.00	1.50
	20.00	1.52
25% Effective Storage Depth (m):	30.00	1.53
0.38	60.00	1.57
	120.00	1.60
(i.e. Depth Below Ground Level) (m):	180.00	1.63
2.62	240.00	1.65
	1476.00	2.42
Effective Storage Depth Across 75% - 25% (m):		
0.76		
Time to Fall to 75% Effective Depth (min):		
600		
Time to Fall to 25% Effective Depth (min):		
N/A		
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
4.42		
Tp75%-25% (mins):		
N/A		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**N/A**

Comments:

NOTE: During the duration of the test the required intercept failed to be reached. Therefore the test is considered not to have been successful.



Site Engineer:	Date:
Oakland	16/12/2024

Checked and Approved By:	Date:
HS	20/12/2024

Location
SA802

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	16/12/2024

Trial Pit Identification:	SA803
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.45
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

Geology Description:

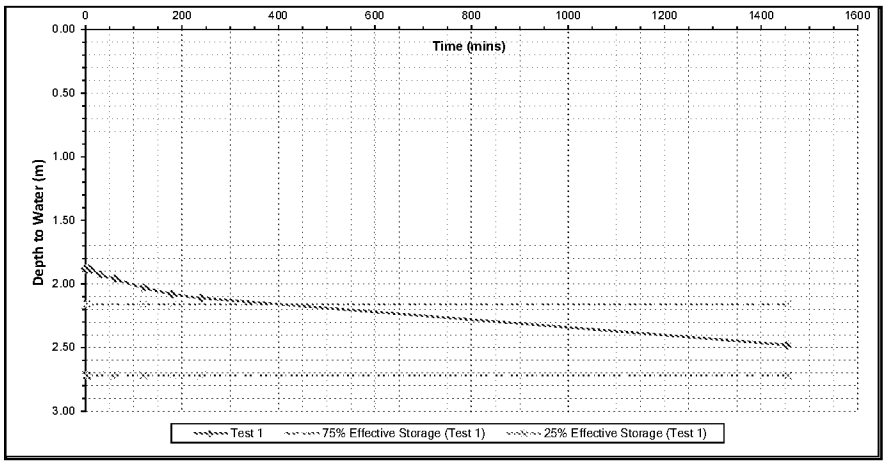
0.00-0.60m bgl Soft dark brown slightly gravelly clayey SILT with rootlets and rare brick cobbles. Gravel is sub-angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]
Between 0.45-0.60m bgl: On south side of pit was a lens of black sandy very gravelly SILT in southern half of pit. Gravel is angular to sub-angular fine to coarse flint, brick and macadam.
0.60-1.50m bgl Soft dark orangeish brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
1.50-1.90m bgl Soft to firm orange brown mottled light greyish brown silty very sandy CLAY. Sand is fine to coarse. [BRICKEARTH]
1.90-2.50m bgl Orange brown silty fine to coarse SAND. [RIVER TERRACE DEPOSITS]
2.50-2.90m bgl Orange brown silty gravelly fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint. [RIVER TERRACE DEPOSITS]
2.90-3.00m bgl Yellowish brown silty fine to coarse SAND. [RIVER TERRACE DEPOSITS]

Test Parameters	TEST 1	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.12	0.00	1.88
	1.00	1.88
75% Effective Storage Depth (m):	2.00	1.88
0.84	3.00	1.88
	4.00	1.88
(i.e. Depth Below Ground Level) (m):	5.00	1.88
2.16	10.00	1.89
	30.00	1.93
25% Effective Storage Depth (m):	60.00	1.96
0.28	120.00	2.03
	180.00	2.08
(i.e. Depth Below Ground Level) (m):	240.00	2.11
2.72	1455.00	2.48
Effective Storage Depth Across 75% - 25% (m):		
0.56		
Time to Fall to 75% Effective Depth (min):		
400		
Time to Fall to 25% Effective Depth (min):		
N/A		
30%(Vp75%-25%) (m3):		
0.15		
As50% (m2):		
3.64		
Tp75%-25% (mins):		
N/A		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**N/A**

Comments:

NOTE: During the duration of the test the required intercept failed to be reached. Therefore the test is considered not to have been successful.



Site Engineer:	Date:
Oakland	16/12/2024

Checked and Approved By:	Date:
HS	20/12/2024

Location
SA803

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	17/12/2024

Trial Pit Identification:	SA804
Trial Pit Length (m):	2.10
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed

See BRE DG365, Soakaway Design (2016).

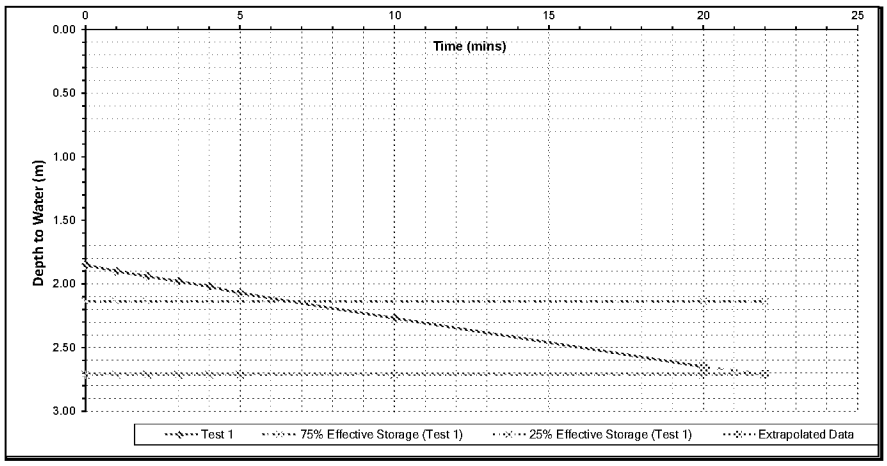
Geology Description:

0.00-0.40m bgl Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine and medium flint. [TOPSOIL]
0.40-1.60m bgl Soft dark orangeish brown silty CLAY. [BRICKEARTH]
1.60-2.30m bgl Soft to firm orangeish brown and occasional mottled light brown slightly sandy silty CLAY with rare sub-angular to sub-rounded fine to coarse flint gravel. [BRICKEARTH]
2.30-3.00m bgl Yellowish brown gravelly silty fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint and white with black specks, weak, low density chalk. [RIVER TERRACE DEPOSITS]

Test Parameters	**TEST 1**	
	Time (min)	**Depth (m)**
Effective Storage Depth (m):	0.00	1.85
1.15	1.00	1.90
75% Effective Storage Depth (m):	2.00	1.94
0.86	3.00	1.98
	4.00	2.02
(i.e. Depth Below Ground Level) (m):	5.00	2.07
2.14	10.00	2.27
	20.00	2.65
25% Effective Storage Depth (m):	22.00	2.71
0.29		
(i.e. Depth Below Ground Level) (m):		
2.71		
Effective Storage Depth Across 75% - 25% (m):		
0.58		
Time to Fall to 75% Effective Depth (min):		
150		
Time to Fall to 25% Effective Depth (min):		
22		
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
4.04		
Tp75%-25% (mins):		
-128		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**-5.84E-06**

Comments:



Site Engineer:	**Date:**
Oakland	17/12/2024

Checked and Approved By:	**Date:**
HS	20/12/2024

Location
SA804

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	17/12/2024

Trial Pit Identification:	SA804
Trial Pit Length (m):	2.10
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

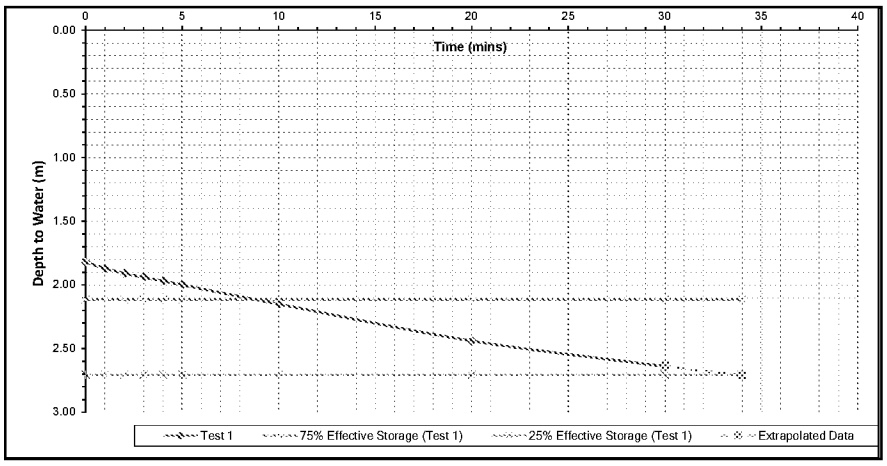
Geology Description:

0.00-0.40m bgl Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine and medium flint. [TOPSOIL]
0.40-1.60m bgl Soft dark orangeish brown silty CLAY. [BRICKEARTH]
1.60-2.30m bgl Soft to firm orangeish brown and occasional mottled light brown slightly sandy silty CLAY with rare sub-angular to sub-rounded fine to coarse flint gravel. [BRICKEARTH]
2.30-3.00m bgl Yellowish brown gravelly silty fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint and white with black specks, weak, low density chalk. [RIVER TERRACE DEPOSITS]

Test Parameters	TEST 2	
	Time (min)	Depth (m)
Effective Storage Depth (m):	0.00	1.82
1.18	1.00	1.87
75% Effective Storage Depth (m):	2.00	1.91
0.89	3.00	1.94
	4.00	1.97
(i.e. Depth Below Ground Level) (m):	5.00	2.00
2.12	10.00	2.15
	20.00	2.44
25% Effective Storage Depth (m):	30.00	2.64
0.30	34.00	2.71
(i.e. Depth Below Ground Level) (m):		
2.71		
Effective Storage Depth Across 75% - 25% (m):		
0.59		
Time to Fall to 75% Effective Depth (min):		
9.00		
Time to Fall to 25% Effective Depth (min):		
34.00		
30%(Vp75%-25%) (m3):		
0.19		
As50% (m2):		
4.12		
Tp75%-25% (mins):		
25.00		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**3.01E-05**

Comments:



Site Engineer:	Date:
Oakland	17/12/2024

Checked and Approved By:	Date:
HS	20/12/2024

Location
SA804

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	17/12/2024

Trial Pit Identification:	SA804
Trial Pit Length (m):	2.10
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

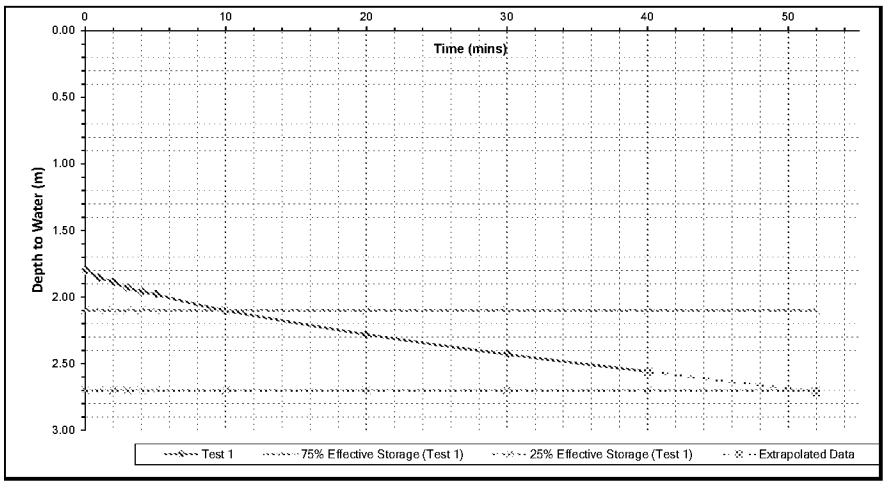
Geology Description:

0.00-0.40m bgl Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine and medium flint. [TOPSOIL]
0.40-1.60m bgl Soft dark orangeish brown silty CLAY. [BRICKEARTH]
1.60-2.30m bgl Soft to firm orangeish brown and occasional mottled light brown slightly sandy silty CLAY with rare sub-angular to sub-rounded fine to coarse flint gravel. [BRICKEARTH]
2.30-3.00m bgl Yellowish brown gravelly silty fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint and white with black specks, weak, low density chalk. [RIVER TERRACE DEPOSITS]

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.20	0.00	1.80
	1.00	1.85
75% Effective Storage Depth (m):	2.00	1.89
0.90	3.00	1.93
	4.00	1.96
(i.e. Depth Below Ground Level) (m):	5.00	1.98
2.10	10.00	2.10
	20.00	2.28
25% Effective Storage Depth (m):	30.00	2.43
0.30	40.00	2.56
	52.00	2.71
(i.e. Depth Below Ground Level) (m):		
2.70		
Effective Storage Depth Across 75% - 25% (m):		
0.6		
Time to Fall to 75% Effective Depth (min):		
10		
Time to Fall to 25% Effective Depth (min):		
52		
30%(Vp75%-25%) (m3):		
0.19		
As50% (m2):		
4.17		
Tp75%-25% (mins):		
42		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.80E-05**

Comments:



Site Engineer:	**Date:**
Oakland	17/12/2024

Checked and Approved By:	**Date:**
HS	20/12/2024

Location
SA804

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	17/12/2024

Trial Pit Identification:	SA805
Trial Pit Length (m):	2.00
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

Geology Description:

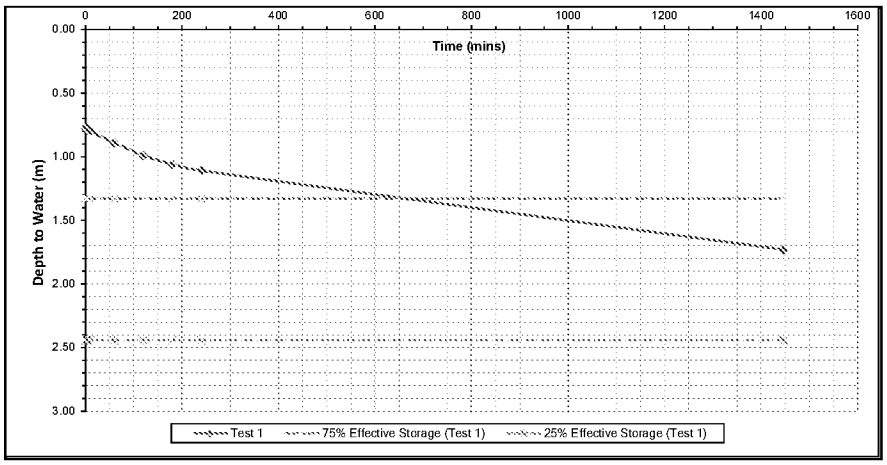
0.00-0.30m bgl Soft brown slightly gravelly silty CLAY with rootlets.[TOPSOIL]
0.30-1.30m bgl Soft dark orangeish brown silty CLAY [BRICKEARTH]
1.30-3.00m bgl Soft to firm orangeish brown mottled light greyish brown slightly sandy silty CLAY. [BRICKEARTH]

Test Parameters	TEST 1	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
2.23	0.00	0.77
	1.00	0.78
75% Effective Storage Depth (m):	2.00	0.78
1.67	3.00	0.78
	4.00	0.79
(i.e. Depth Below Ground Level) (m):	5.00	0.79
1.33	10.00	0.80
	60.00	0.89
25% Effective Storage Depth (m):	120.00	0.99
0.56	180.00	1.06
	240.00	1.11
(i.e. Depth Below Ground Level) (m):	1447.00	1.73
2.44		
Effective Storage Depth Across 75% - 25% (m):		
1.12		
Time to Fall to 75% Effective Depth (min):		
650		
Time to Fall to 25% Effective Depth (min):		
N/A		
30%(Vp75%-25%) (m3):		
0.33		
As50% (m2):		
6.58		
Tp75%-25% (mins):		
N/A		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**N/A**

Comments:

NOTE: During the duration of the test the required intercept failed to be reached. Therefore the test is considered not to have been successful.



Site Engineer:	Date:
Oakland	17/12/2024

Checked and Approved By:	Date:
HS	20/12/2024

Location
SA805

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	18/12/2024

Trial Pit Identification:	SA806
Trial Pit Length (m):	2.20
Trial Pit Width (m):	0.40
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

Geology Description:

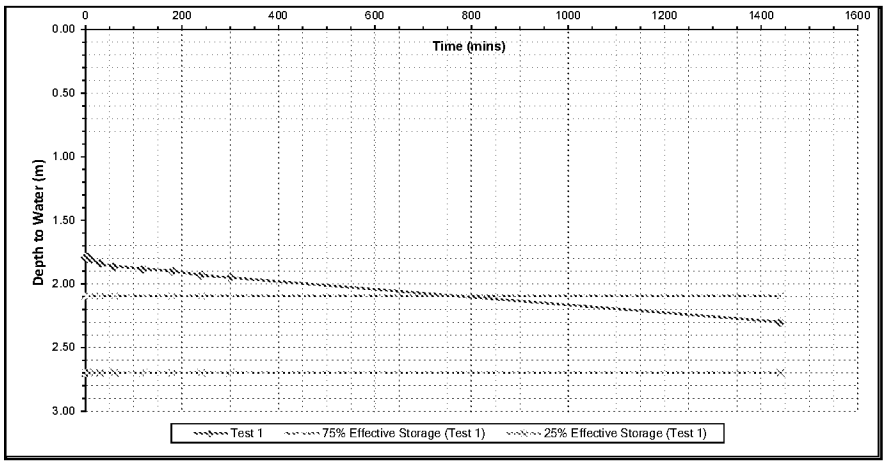
0.00-0.30m bgl Soft dark brown silty CLAY with rootlets. [TOPSOIL]
0.30-1.20m bgl Soft dark orangeish brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
1.20-2.10m bgl Soft to firm orangeish brown mottled light brown slightly sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
From 1.50m bgl: rare cobbles of sub-rounded flint and becoming sandy.
2.10-3.00m bgl Orange slightly gravelly clayey fine to coarse SAND. Gravel is sub-angular to sub-rounded fine to coarse flint. [RIVER TERRACE DEPOSITS]

Test Parameters	**TEST 1**	
	Time (min)	**Depth (m)**
Effective Storage Depth (m):	0.00	1.79
1.21	1.00	1.79
75% Effective Storage Depth (m):	2.00	1.79
0.91	3.00	1.79
	4.00	1.79
(i.e. Depth Below Ground Level) (m):	5.00	1.80
2.09	10.00	1.81
	30.00	1.84
25% Effective Storage Depth (m):	60.00	1.86
0.30	120.00	1.88
	180.00	1.90
(i.e. Depth Below Ground Level) (m):	240.00	1.93
2.70	300.00	1.95
	1440.00	2.30
Effective Storage Depth Across 75% - 25% (m):		
0.61		
Time to Fall to 75% Effective Depth (min):		
750		
Time to Fall to 25% Effective Depth (min):		
N/A		
30%(Vp75%-25%) (m3):		
0.16		
As50% (m2):		
4.03		
Tp75%-25% (mins):		
N/A		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**N/A**

Comments:

NOTE: During the duration of the test the required intercept failed to be reached. Therefore the test is considered not to have been successful.



Site Engineer:	**Date:**
Oakland	18/12/2024

Checked and Approved By:	**Date:**
HS	20/12/2024

Location
SA806

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	18/12/2024

Trial Pit Identification:	SA807
Trial Pit Length (m):	2.10
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

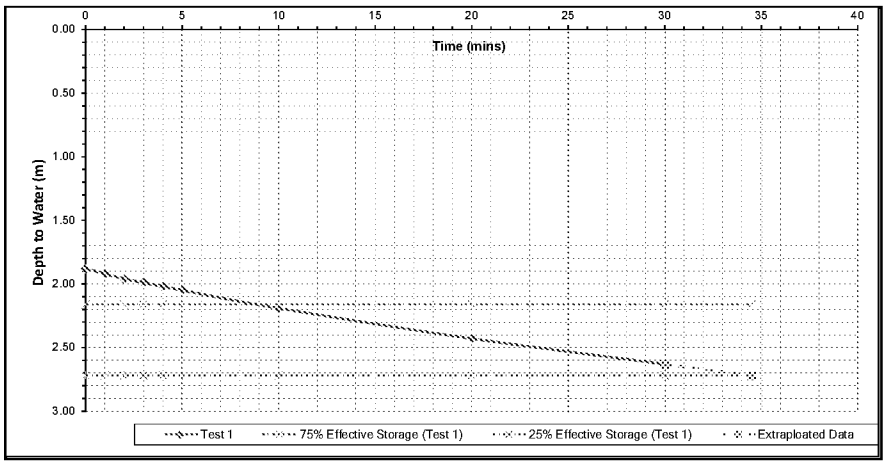
Geology Description:

0.00-0.40m bgl Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
0.40-0.80m bgl Soft dark orangeish brown silty CLAY. [BRICKEARTH]
0.80-2.20m bgl Soft orangeish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
2.20-3.00m bgl Recovered as structureless chalk composed of Soft light yellowish brown very gravelly sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse weak low density off white with black specks chalk and occasionally flint. Presumed grade is Dm. [LEWES NODULAR CHALK]

Test Parameters	TEST 1	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.12	0.00	1.88
	1.00	1.92
75% Effective Storage Depth (m):	2.00	1.96
0.84	3.00	1.99
	4.00	2.02
(i.e. Depth Below Ground Level) (m):	5.00	2.05
2.16	10.00	2.19
	20.00	2.43
25% Effective Storage Depth (m):	30.00	2.63
0.28	34.50	2.72
(i.e. Depth Below Ground Level) (m):		
2.72		
Effective Storage Depth Across 75% - 25% (m):		
0.56		
Time to Fall to 75% Effective Depth (min):		
9		
Time to Fall to 25% Effective Depth (min):		
35		
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
3.96		
Tp75%-25% (mins):		
26		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**2.85E-05**

Comments:



Site Engineer:	Date:
Oakland	18/12/2024

Checked and Approved By:	Date:
HS	20/12/2024

Location
SA807

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	18/12/2024

Trial Pit Identification:	SA807
Trial Pit Length (m):	2.10
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

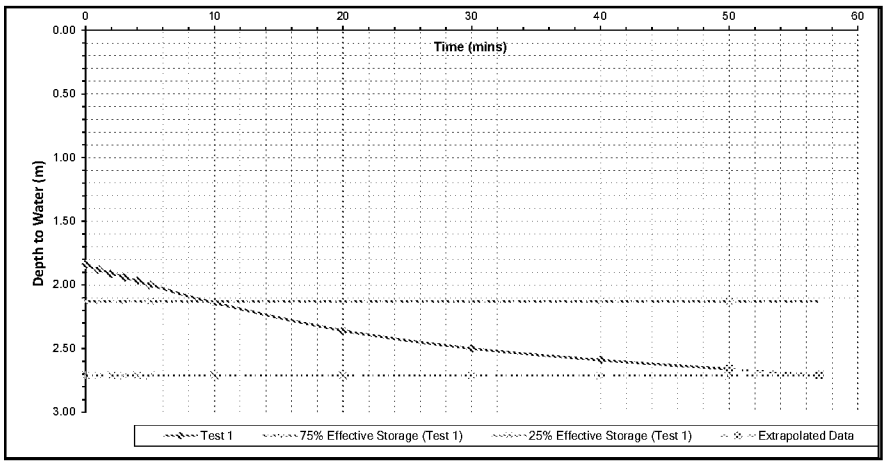
Geology Description:

0.00-0.40m bgl Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
0.40-0.80m bgl Soft dark orangeish brown silty CLAY. [BRICKEARTH]
0.80-2.20m bgl Soft orangeish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
2.20-3.00m bgl Recovered as structureless chalk composed of Soft light yellowish brown very gravelly sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse weak low density off white with black specks chalk and occasionally flint. Presumed grade is Dm. [LEWES NODULAR CHALK]

Test Parameters	TEST 2	
	Time (min)	Depth (m)
Effective Storage Depth (m):	0.00	1.84
1.16	1.00	1.88
75% Effective Storage Depth (m):	2.00	1.91
0.87	3.00	1.94
	4.00	1.97
(i.e. Depth Below Ground Level) (m):	5.00	2.00
2.13	10.00	2.14
	20.00	2.36
25% Effective Storage Depth (m):	30.00	2.50
0.29	40.00	2.59
	50.00	2.66
(i.e. Depth Below Ground Level) (m):	57.00	2.71
2.71		
Effective Storage Depth Across 75% - 25% (m):		
0.58		
Time to Fall to 75% Effective Depth (min):		
9.00		
Time to Fall to 25% Effective Depth (min):		
57.00		
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
4.07		
Tp75%-25% (mins):		
48.00		

DESIGN SOIL INFILTRATION RATE, f (m/s):	1.56E-05

Comments:



Site Engineer:	Date:
Oakland	18/12/2024

Checked and Approved By:	Date:
HS	20/12/2024

Location
SA807

Site Name:	Ford Airfield - Soakaway Testing
Site Reference:	A11918-8
Test Date:	18/12/2024

Trial Pit Identification:	SA807
Trial Pit Length (m):	2.10
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

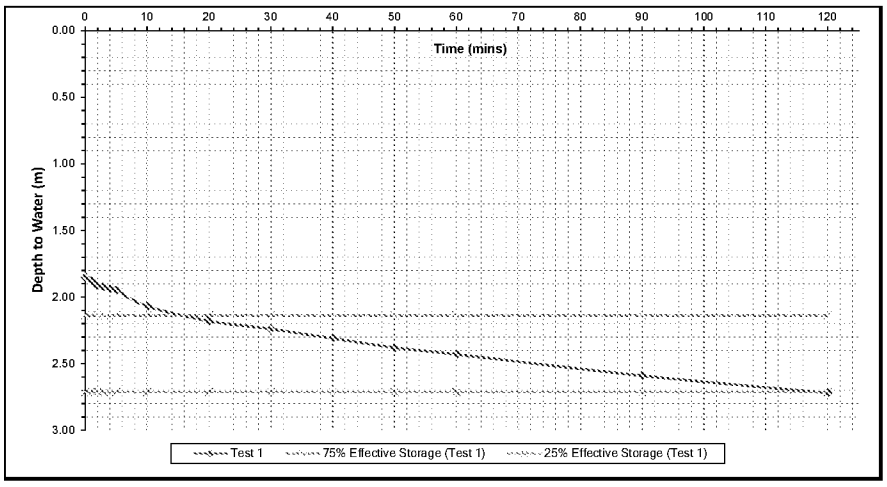
Geology Description:

0.00-0.40m bgl Soft dark brown slightly gravelly silty CLAY with rootlets. Gravel is sub-angular to sub-rounded fine to coarse flint. [TOPSOIL]
0.40-0.80m bgl Soft dark orangeish brown silty CLAY. [BRICKEARTH]
0.80-2.20m bgl Soft orangeish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
2.20-3.00m bgl Recovered as structureless chalk composed of Soft light yellowish brown very gravelly sandy SILT. Sand is fine to coarse. Gravel is sub-angular to sub-rounded fine to coarse weak low density off white with black specks chalk and occasionally flint. Presumed grade is Dm. [LEWES NODULAR CHALK]

Test Parameters	**TEST 3**	
	Time (min)	**Depth (m)**
Effective Storage Depth (m):	0.00	1.85
1.15	1.00	1.88
75% Effective Storage Depth (m):	2.00	1.91
0.86	3.00	1.92
	4.00	1.94
(i.e. Depth Below Ground Level) (m):	5.00	1.95
2.14	10.00	2.07
	20.00	2.18
25% Effective Storage Depth (m):	30.00	2.24
0.29	40.00	2.31
	50.00	2.38
(i.e. Depth Below Ground Level) (m):	60.00	2.43
2.71	90.00	2.59
	120.00	2.72
Effective Storage Depth Across 75% - 25% (m):		
0.575		
Time to Fall to 75% Effective Depth (min):		
16		
Time to Fall to 25% Effective Depth (min):		
119		
30%(Vp75%-25%) (m3):		
0.18		
As50% (m2):		
4.04		
Tp75%-25% (mins):		
103		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**7.25E-06**

Comments:



Site Engineer:	**Date:**
Oakland	18/12/2024

Checked and Approved By:	**Date:**
HS	20/12/2024

Location
SA807

Site Name:	rd Airfield - Soakaway Testing & Monitor
Site Reference:	A11918-8
Test Date:	18/12/2024

Trial Pit Identification:	SA808
Trial Pit Length (m):	2.20
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	3.00
Groundwater Level (m bgl):	N/A

GRAVEL FILLED SOIL INFILTRATION RATE TEST

20mm Clean Gravel used with 30% free void space assumed
See BRE DG365, Soakaway Design (2016).

Geology Description:

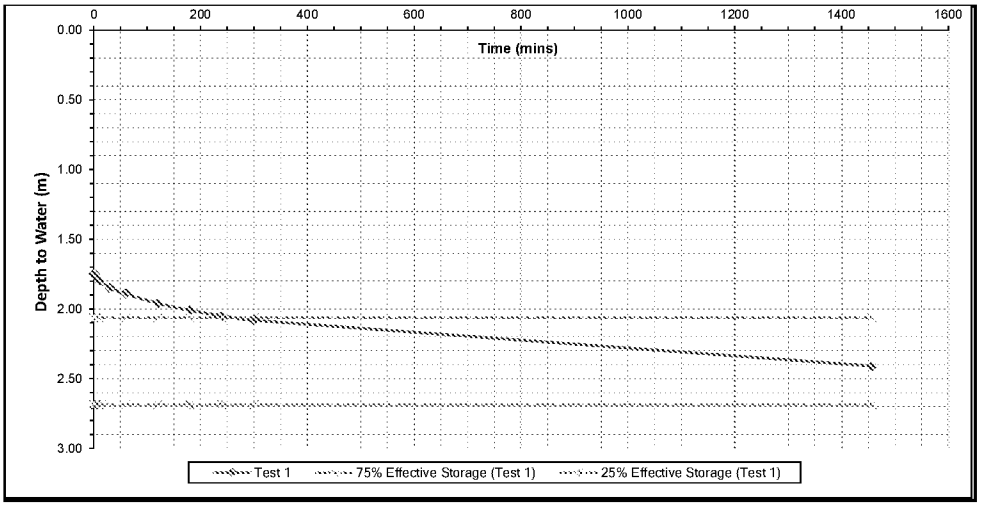
0.00-0.30m bgl Soft dark brown gravelly clayey SILT. Gravel is angular to sub-rounded fine to coarse flint and brick. [MADE GROUND]
0.30-1.90m bgl Soft dark orangeish brown silty CLAY. [BRICKEARTH]
1.90-2.30m bgl Soft orangeish brown mottled yellowish brown sandy silty CLAY. Sand is fine to coarse. [BRICKEARTH]
2.30-3.00m bgl Orange silty fine to coarse SAND. [RIVER TERRACE DEPOSITS]
From 2.50m bgl: becomes slightly gravelly. Gravel is sub-angular to sub-rounded fine to coarse flint.

Test Parameters	**TEST 1**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
1.25	0.00	1.75
	1.00	1.75
75% Effective Storage Depth (m):	2.00	1.75
0.94	3.00	1.76
	4.00	1.76
(i.e. Depth Below Ground Level) (m):	5.00	1.77
2.06	10.00	1.80
	30.00	1.85
25% Effective Storage Depth (m):	60.00	1.89
0.31	120.00	1.96
	180.00	2.01
(i.e. Depth Below Ground Level) (m):	240.00	2.05
2.69	300.00	2.08
	1457.00	2.41
Effective Storage Depth Across 75% - 25% (m):		
0.63		
Time to Fall to 75% Effective Depth (min):		
250		
Time to Fall to 25% Effective Depth (min):		
N/A		
30%(Vp75%-25%) (m3):		
0.21		
As50% (m2):		
4.48		
Tp75%-25% (mins):		
N/A		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**N/A**

Comments:

NOTE: During the duration of the test the required intercept failed to be reached. Therefore the test is considered not to have been successful.



Site Engineer:	**Date:**
Oakland	18/12/2024

Checked and Approved By:	**Date:**
HS	20/12/2024

Location
SA808

APPENDIX V

APPENDIX V: DRAINAGE SCHEME (DRAWING REF: 2205771-D075)