Phase II-III
Geo-Environmental Site Assessment

A11004

Amesbury 299
Penny Lane
Amesbury
Wiltshire
SP4 7FQ

Prepared for

Bloor Homes Southern Ltd
River View House
First Avenue
Newbury Business Park
London Road
Newbury
RG14 2PS

Omnia ref: A11004/1.0 Draft
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Quality Assurance

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Executive Summary	
Site Address	Amesbury 299, Kings Gate, Amesbury, Wiltshire, SP4 7FQ
National Grid Reference	15964, 40047
Site Area	21ha
Current Site Use	The site currently comprises two open fields located to the north of Stockport Avenue, Amesbury, SP4 7FQ. At the time of the site investigation the larger of the two fields was overgrown with coarse vegetation and grass and the field to the north was laid to grass.
Geology, Hydrology & Hydrogeology	Geological mapping for the site indicates that the majority of the site is underlain by bedrock of the Seaford Chalk Formation, classified as a Principal Aquifer. The ground investigation encountered the following geology, which generally agreed with published geology: <u>Topsoil</u> Topsoil generally comprised grass cover over a brown gravelly fine to medium SAND. The gravel component is angular to subrounded fine to coarse of flint and chalk. Deposits were encountered to a maximum observed depth of 0.80m bgl. <u>Made Ground</u> Made Ground deposits were encountered within intrusive locations WS122, WS123, WS126, TP111, TP113, TP114 and SA104. Made Ground was found to comprise grass cover over a brown angular to subrounded fine to coarse sandy GRAVEL of flint and chalk, with anthropogenic material comprising cobbles of brick, concrete, occasional plastic, wood and rare asphalt. Made Ground was recorded to a maximum thickness of 3.50m within WS123. <u>Head Deposits</u> Superficial deposits were encountered within locations WS122, WS124, WS125 and TP111. Superficial deposits comprised three distinct units, summarised as follows; the first unit comprised a firm orangeish brown gravelly CLAY with varying sand content. The second unit comprised a brown gravelly medium to coarse SAND and the third unit comprised a light brownish grey, angular to subrounded, fine to coarse sandy GRAVEL. <u>Bedrock – Seaford Chalk Formation</u> Bedrock of the Seaford Chalk Formation encountered on site is considered to be Grade C4 structured chalk. Trial pits locations were used to Grade the chalk in accordance with guidance set out in CIRIA C574. Bedrock generally comprised a weak, medium density white with frequent black specks CHALK. Fractures were closely spaced, open and generally infilled with uncompact light creamish brown, silt sized comminuted chalk. Fractures within the rock ranged between 20mm-60mm with a typical aperture of >3mm. Sparse horizontal band of cobble sized flint at depths ranging from 1.00-2.50m bgl. Chalk arisings from borehole locations was recovered as structureless Chalk due to the percussive drilling technique. However, given that structural Chalk was proven within trial pits and the fact that SPT N values of N=>25 were recorded from depths of 1.00m bgl at borehole locations, it is considered that structural Chalk is also present within all borehole locations.
Revised Conceptual Site Model	
Following completion of the Tier 1 risk assessment no elevated concentrations were identified. It is therefore considered that no potentially active pollution linkages have the potential to present a significant risk to human health.	
Concrete Classification	

Soils have been classified as DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1 for a Greenfield Site.

Ground Gas Classification

A preliminary ground gas classification has classified low-rise housing as Green under the NHBC Traffic Light Classification in accordance with guidance set out in CIRIA C665.

Classification of the site as Green indicates a negligible ground gas regime and does not require the installation of any special ground gas protection measures.

Geotechnical Assessment

The following geotechnical assessment has been undertaken based on in-situ testing, laboratory analysis, and descriptions on the underlying geology. Foundation depths presented are indicative only based on a minimum presumed bearing value for a particular foundation type. Line loadings have not been made available such that the final depth and type of foundation required following design could vary.

With reference to engineer logs, detailed in Appendix V, grading of the chalk has been identified as C4, confirmed from observations within trial pit logs.

Minimum presumed bearing capacities for shallow foundations in chalk are detailed within Table 2 of BS 8004:1986. Referring to in-situ testing and engineer descriptions the chalk indicates a medium density. It is presumed to have a minimum presumed bearing capacity of approximately 300kN/m^2, based on bearing values outlined in CIRIA C574, bearing onto competent chalk at a depth of approximately 1.00m below existing site levels.

Particular consideration should be made to the great thicknesses of Made Ground within the northern section of the site. Due to potential differential settlement other means of foundation type should be considered (e.g. trench fill, raft foundations) and may involve locally deepening foundations within this area as presumed loads would be insufficient in the Made Ground.

It is recommended, in accordance with CIRIA C574 and in British Standard 8004:1986 – *Foundations*, that a minimum foundation depth of 450mm bgl is adopted for foundations in chalk due to the bedrock chalk having a high susceptibility to frost heave.

Indicative values are given presuming only vertical stresses are applied to the shallow foundation in the chalk. It is recommended that the advice of a specialist foundation contractor is sought to further discuss proposed layout and confirm capacity with regards to the encountered ground conditions. Again, please note that these values for foundations should not be considered as design values and are provided for information purposes such that they should not be relied upon without review and consultation with a design engineer.

Recommendations

Is it considered that the site is suitable for its intended use. However, if during the development stage any evidence of contamination is identified, works should be halted, and contact made with a suitably qualified Environmental Consultant. As determined appropriate by the Consultant, further investigation and sampling may be required to determine the appropriate actions. Upon completion contact should be made with the regulator to achieve sign off of the works.

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1.0 INTRODUCTION

1.1 Background

Omnia Environmental Consulting (OEC) have been commissioned by Bloor Homes Southern to undertake a Phase II to III Geo-Environmental Site Assessment at the site of Amesbury 299 located off Stockport Avenue, Kings Gate, Amesbury, Wiltshire, SP4 7FQ.

A site location plan is presented as Figure 1.0 within Appendix III.

1.2 Proposed Development

It is understood that the client proposes to develop the site through the construction of approximately 300 residential units with associated parking, infrastructure, private gardens and communal areas of soft landscaping.

A proposed development plan is presented as Figure 1.0 within Appendix III.

1.3 Objectives

The objectives of the Phase II-III Geo-Environmental Site Assessment are to:

- Undertake an assessment of the near surface through intrusive site investigation;
- Assess the implications of any potential environmental risks, liabilities and development constraints associated with the site in relation to the future use of the site and in relation to off-site receptors; and,
- Provide a factual and interpretative report relating to the site and provide recommendations on any potential development issues with particular consideration to Residential, Construction Worker and Environmental receptors.

1.4 Sources of Information

Background information was sought from the following sources:

- The British Geological Survey (BGS) map for the site (Salisbury, Sheet 298, Solid and Drift Edition at a scale of 1: 50,000);
- BGS Hydrogeological Sheet 9 – Hydrogeological Map of Hampshire and the Isle of Wight at a scale of 1:100,000;
- CIRIA C665, Assessing the Risks Posed by Hazardous Ground Gases to Buildings (2007);
- BS 8485:2015, Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings;
- BRE Special Digest 1:2005. Concrete in Aggressive Ground;
- Tomlinson, M.J., 2001. Foundation Design and Construction. 7th Edition. Pearson Prentice Hall;
- CIRIA C574 – Engineering in Chalk; and,
- British Standard 8004:1986 – Code of Practice for Foundations.

1.5 Limitations

The limitations of this report are presented in Appendix I.

1.6 Confidentiality

OEC has prepared this report solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from OEC; a charge may be levied against such approval.

2.0 SITE SETTING

2.1 Site Details

Site Address	Amesbury 299, Kings Gate, Amesbury, Wiltshire, SP4 7FQ
National Grid Reference	15964, 40047

All acronyms used within this report are defined in the Glossary presented in Appendix II.

A site location plan is presented as Figure 1.0 (Appendix III).

2.2 Current Site Use

Site Description

The area of investigation was located to the north of Stockport Avenue, Kings Gate and east of the A345, approximately 1.3km south west of Amesbury town centre. The site comprised an irregular shaped parcel of open land spanning across three areas, divided by hedgerows and mature deciduous trees. The northern area of the site comprised a smaller parcel of landscaped grass within the Kings Gate development area. The Central and southern-most areas of the site comprised of large over grown fields to the north of the site compound area. The subject site covered an area of approximately 21ha. The area of investigation was accessed through the construction site via Princess Way, through an opening in heras fence panels to the south-east of the site.

The three main areas of the site are described in detail in the following section.

Northern area

The northernmost area of the site comprised a well-kept area of roughly rectangular land laid to grass immediately to the west of a residential development area and Great Amber Way. The area of the site was noted to be generally flat and was topographically higher than the rest of the site with the land sloping away gently towards the southwest. The area was bound to the north and south by heras and wooden fence panels. The east boundary of the area was denoted by Great Amber Way with a residential development immediately beyond. The west of the area was bound by dense overgrown vegetation and grass which sloped gently towards the west.

To the south of the area a storage compound comprising empty porta cabins and waste site materials was located. To the north of the area was a site undergoing the early stages of groundworks.

A waste water inspection cover was located in the north eastern most corner of the area.

Central and southernmost area

At the time of the site investigation the central and southernmost area of the site comprised two adjoining parcels of land separated by a row of mature deciduous trees orientated approximately east to west towards the south of the site (*Photograph 1*). The majority of the site comprised an open field with unkempt, overgrown, dense vegetation. Towards the southeastern corner of the site was the site compound which contained a number of blue porta-cabins and served as car parking area as well

as a storage area for materials and plant (*Photograph 5*).

This area of the site was bounded by heras fence panels and wooden posts around the perimeter of the site. With the wider development area directly to the east of the site.

Topography on site was noted to be gently sloping towards the south.

Hazardous Materials Storage

During the site walkover, no hazardous materials were observed within the main site area.

Potential Asbestos Containing Material (PACM)

No potential asbestos containing materials (PACMs) were noted on the ground surface within the area of the site inspected during the site walkover.

Waste Storage

At the time of site investigation two stockpiles (approximately 10m (l) x 10m (w) x 2m (h)) were located in the south eastern part of the site. The stockpiles comprised waste building materials including brick rubble and scrap metal (*Photograph 6*), which was observed to be transported on site by fork lift trucks and dumper trucks.

During follow-on ground gas and groundwater monitoring visits it was noted that multiple stockpiles comprising mixed building materials were present on site.

2.3 Surrounding Area

The surrounding land uses are summarised below:

Direction	Land Use
North	Field in the early stages of development.
East	New build residential development.
South	Field comprising rough vegetation with Stockport Avenue and agricultural fields immediately beyond.
West	A345 with agricultural land immediately beyond.

3.0 ENVIRONMENTAL SETTING

Information obtained from the previous reports undertaken by OEC and others has been used in the following sections:

3.1 Geology & Hydrogeology

The British Geological Survey (BGS) map for the site (Salisbury, Sheet 298, Solid and Drift Edition at a scale of 1:50,000) indicates that the site is underlain by the following geological sequence:

Geological Unit	Classification	Description	Aquifer Classification
Superficial (Northern Area only)	Head Deposits	Clay, silt, sand & gravel	Secondary (Undifferentiated)
Bedrock	Seaford Chalk Formation	Chalk	Principal Aquifer

The southeastern corner of the subject site is located within a Source Protection Zone 2 (SPZ2 - outer catchment) and Drinking Water Safeguard Zone (Groundwater). The previous report did not identify any groundwater abstractions, surface water abstractions or potable water abstraction licenses within 250m of the site.

Based on local topography and the location of surface watercourses it is considered that shallow groundwater, if present, will follow local topography and flow in a southerly direction.

Given that the site is directly underlain by the Seaford Chalk Formation, reference has been made to the BGS Hydrogeological Map for the area (BGS Hydrogeological Sheet 9 – Hydrogeological Map of Hampshire and the Isle of Wight at a scale of 1:100,000). The hydrogeological map suggests that groundwater within the Chalk is located at approximately 75mAOD (approximately 25m bgl) with a regional groundwater flow towards the south.

3.2 Hydrology

The report (Hydrock report Ref. R/13608/001) identified twenty (20no.) surface water features within influencing distance from the site. However, from review of the information these have been attributed to the River Avon, a primary river, located 100m north west of the site.

The site is not located within a currently defined flood risk area with the closest Zone 2 and Zone 3 floodplains located 85m and 86m northwest of the site respectively and associated with the River Avon.

The site is located within 50m of a British Geological Survey groundwater flooding susceptibility area, with a very low susceptibility.

3.3 Industrial Land Uses

The previous Hydrock report identified nine (19no.) industrial land uses within a 250m radius of the subject site. Out of these seven (7no.) were considered to be potentially contaminative, and are summarised below:

- Pumping Station, 94m north west;
- Electricity Sub-station, 149m north;
- Electricity Sub-Station, 168m north;
- Pumping House, 172m north-west;
- Electrical Sub-stations, 182m north-east;
- Electrical sub-station, 212m north west; and,
- A&J Moore Metal Recycling Ltd, 247m south.

3.4 Sensitive Land Uses

The previous report identified that the site is located within an area identified as a currently defined Nitrate Vulnerable Zone (NVZ).

The River Avon, located approximately 100m northwest of the site, is also designated as a Special Area of Conservation (SAC), a Site of Special Scientific Interest (SSSI) and an Environmentally Sensitive Area.

4.0 PREVIOUS INVESTIGATIONS

4.1 Hydrock, Desk Study and Ground Investigation, Amesbury Phase 4, Amesbury, Wiltshire, March 2014, Ref: R/13608/001 Issue 2

A combined Phase I Desk Top Study and ground investigation report was prepared for a site directly to the east of the site by Hydrock in March 2014 and presented within the report ref: R/13608/001. Multiple phases of ground investigation were carried out by others, which are summarised in the report.

The historic review indicated that the wider Bloor Homes site comprised open fields since the earliest date of mapping in 1877. Throughout the years, the site underwent minor changes until 1970 when a large building and associated fuel tank are noted within the south eastern section of the wider site. This area does not fall within the current area of investigation.

Data from this report has been used and referenced within this section to provide information on potential sources of contamination.

4.1.1 Conceptual Site Model

The potential contamination sources identified by the Phase I Desk Top Study are summarised in Table 4.1 below.

Table 4.1 Summary of Potential Contaminant Sources

Potential Source	Potential Contaminants	Potential Impact
On-Site		
Made Ground (Historic use of the site as agricultural fields and farm buildings)	Metals, Metalloids, Polycyclic Aromatic Hydrocarbons (PAH), Total Petroleum Hydrocarbons (TPH)	Human Health and Controlled Waters
Former Tank (dated 1972) in the south-east of the site	TPH	Human Health and Controlled Waters

No off-site potential sources were identified.

4.1.2 Conclusions and Recommendations

The Phase I-II report drew the following conclusions:

- The Conceptual Site Model identified the presence of potentially active pollution linkages due to the historic use and tank present on site;
- Phase II ground investigations comprising the advancement of thirty-three (33no.) did not identify the presence of impacted soils on site and it was concluded that the site was suitable for its intended use; and,
- The report recommended that further intrusive ground investigation was undertaken to assess the geotechnical properties of the soils underneath building footprints that could not be accessed at the time of the initial investigation and assess the thickness of Made Ground within the southern section of the site.

4.2 Omnia Environmental Consulting (OEC), Phase II-III Geoenvironmental Site Assessment, Land North of Stockport Road, Kings Gate, Amesbury, Wiltshire, SP4 7FQ, April 2017, Ref: A10784/1.0

A Phase II ground investigation report was prepared for a site directly to the east of the site by OEC in April 2017 and presented within OEC report ref: A10784/1.0. Multiple phases of ground investigation had been previously undertaken by others, which are also summarised in the report.

Data from this report has been used and referenced within this section to provide information on potential sources of contamination.

4.2.1 Conceptual Site Model

The potential contamination sources identified by the Phase II report and review of previous reports are summarised in Table 4.2 below.

Table 4.2 Summary of Potential Contaminant Sources

Potential Source	Potential Contaminants	Potential Impact
On-Site		
Made Ground (Historic use of the site as agricultural fields and farm buildings)	Metals, Polycyclic Aromatic Hydrocarbons (PAH), Total Petroleum Hydrocarbons (TPH), Asbestos fibres, Ground Gas (CO_2 and CH_4)	Human Health and Controlled Waters

No off-site potential sources were identified.

4.2.2 Conclusions and Recommendations

The Phase II report made the following conclusions:

- The Conceptual Site Model has identified the presence of potentially active pollution linkages due to the historic use of the site;
- Elevated concentrations of beryllium exceeding the Tier I screening value of 1.7mg/kg were identified within location TP114 where concentrations of 2.3mg/kg were recorded at a depth of 0.10-0.40m bgl, and which was considered to have the potential to present a significant risk to human health; and,
- The report recommended that further delineation works should be undertaken to determine the lateral extent of beryllium elevated concentrations in the area of TP114 to confirm the extent of remedial works required to render the area suitable for the intended use.

4.3 Omnia Environmental Consulting (OEC), Delineation works, Land North of Stockport Road, Kings Gate, Amesbury, Wiltshire, SP4 7FQ, May 2017, Ref: A10784/170526/L1

A supplementary ground investigation report was prepared for a site directly to the east of the site by OEC in May 2017, following recommendations made within OEC report Ref: A10784/1.0.

The supplementary investigation comprised the advancement of ten (10no.) trial pits in the area of TP114 to delineate the lateral extent of soils impacted by elevated concentrations of beryllium, which were considered to have the potential to pose a significant risk to Human Health.

4.3.1 Conclusions and Recommendations

The supplementary report drew the following conclusions:

- No further concentrations of beryllium exceeding the adopted screening criteria for a residential end use were identified and as such is was concluded that elevated concentrations of beryllium previously identified within TP114 was restricted to soils in the immediate vicinity of TP114.
- The report concluded that remedial works comprising the removal of Made Ground to a depth of 600mm bgl and the installation of a clean cover system would be required in areas of proposed soft landscaping in the vicinity of TP114.

5.0 SITE INVESTIGATION

5.1 General

A ground investigation was designed based on the client's requirements and the scope of works is presented within OEC proposal document ref: A11004/180718/L1.

Exploratory fieldwork was conducted over twelve (12no.) working days commencing on 13th August 2018 and comprised the following:

Table 5.1 Summary of Fieldwork

Potential Source/Rationale	Location Hole	Type	Maximum Depth (m bgl)	Borehole Response Zone (m bgl)
General spread across the site for assessment of geotechnical settings of deeper soils in order to facilitate foundation design.	BH101, BH102 and BH103	Cable Percussive	15.00	-
General spread across the site for assessment of potential contamination. Assessment of geotechnical setting.	WS102 WS107 WS108	Windowless Sampler	5.00	-
General spread across the site for assessment of potential contamination. Assessment of geotechnical setting. Installation of Ground gas and groundwater monitoring installation.	WS104 WS106 WS108 WS112 WS118 WS126	Windowless Sampler	5.00	1.00-3.00 1.00-2.00 0.50-1.00 1.00-2.00 1.00-2.50 1.00-3.00
General spread across the site for assessment of potential contamination. Assessment of geotechnical settings of proposed roadways.	TP101-TP115	Trial Pit	3.00	-
Targeting areas of proposed road access for the assessment California Bearing Ratio utilising plate load testing within the near surface. Further assessment of geotechnical setting.	CBR1-CBR9	California Bearing Ratio Test (Plate Load Testing)	0.60	-
Lateral spread across the site for the determination of soil infiltration rates within variable near surface deposits.	SA101-SA104	Trial Pit	2.00	-

The exploratory hole locations are illustrated on Figure 2.0 and 2.1 (Appendix III). The ground conditions encountered are indicated on the exploratory hole logs, which are provided in Appendix V.

5.2 Laboratory Analysis

Selected soil samples were submitted for a range of chemical analysis including:

- Asbestos fibres in soil;
- Speciated PAH;
- Banded TPH;

- CLEA Metals;
- Phenols;
- Total Cyanide;
- Organochlorine Pesticides;
- Chlorophenoxy Acid Herbicide;
- Moisture Content;
- pH; and,
- Water-Soluble Sulphate (2:1 extract).

Jones Environmental Laboratory of Deeside undertook the analytical work in accordance with UKAS accreditation where applicable and the laboratory analysis certificates are presented as Appendix VI and discussed in Section 7.

Selected soil samples were submitted to I2 Analytical for a range of geotechnical testing, in accordance with UKAS methodology where applicable, comprising:

- Moisture Content; and,
- Soaked California Bearing Ratio (CBR) Testing.

The geotechnical analysis certificates are presented in Appendix VIII.

5.3 Ground Gas and Groundwater Monitoring

Concentrations of methane (CH_4), carbon dioxide (CO_2) and oxygen (O_2) were measured using an infrared gas analyser (GA5000), calibrated to a reference standard (before and after each survey) and gas flow rates were measured using an internal flow pod. Gas measurements were recorded for a minimum of ninety seconds at each location or until recorded concentrations stabilised for three (3no.) consecutive readings, at which point the maximum concentration of CH_4 and CO_2 together with the lowest concentration of O_2 were recorded.

Groundwater monitoring was undertaken using an electronic dip tape to record the depth to groundwater. Ground gas and groundwater results are presented in Section 6.5 and discussed in Section 7.3.

6.0 GROUND AND GROUNDWATER CONDITIONS

6.1 Ground Conditions

6.1.1 Summary of Ground Conditions

The ground investigation generally confirms the published geology, with Topsoil encountered at all locations. Topsoil was immediately underlain by bedrock attributed to the Seaford Chalk Formation across the majority of the site. Localised thicknesses of Made Ground were encountered in the northernmost part of the site.

6.1.2 Topsoil

Grass cover immediately underlain by Topsoil was encountered within all intrusive locations, with the exception of WS122, WS123, WS126, TP111, TP113, TP114 and SA104. Topsoil generally comprising a brown gravelly fine to medium SAND. The gravel component comprised angular to subrounded fine to coarse flint and Chalk. Occasional rootlets were also encountered within the unit. Topsoil deposits were encountered to a maximum observed depth of 0.80m bgl.

6.1.3 Made Ground

Made Ground was encountered within intrusive locations WS122, WS123, WS126, TP111, TP113, TP114 and SA104 which were located in the northernmost part of the site. Made Ground and was found to comprise a brown angular to subrounded fine to coarse sandy GRAVEL of flint and Chalk. Anthropogenic material was encountered within Made Ground and comprised frequent cobbles of brick, concrete, occasional plastic, wood and rare asphalt. Made Ground ranged in thickness from 0.60m (TP114) to 3.50m (WS123).

6.1.3 Superficial Head Deposits

Superficial deposits were encountered within locations BH103, WS122, WS124, WS125 and TP111 located in the northern most part of the site, underlying Made Ground and Topsoil. Superficial deposits comprised of three distinct units, summarised as follows; the first unit comprised a firm orangeish brown gravelly CLAY with varying sand content. The Sand component was fine to medium grained and the gravel comprise angular to subangular, medium to coarse flint. The second unit comprised a brown gravelly medium to coarse SAND. Gravel is angular to subrounded fine to coarse flint. The third unit comprised a light brownish grey, angular to subrounded, fine to coarse sandy GRAVEL.

Superficial deposits ranged in thickness from 0.16m (TP111) to 1.90m (WS125). The deposits were encountered to a maximum depths of 3.00m bgl in WS122.

6.1.4 Bedrock Deposits – Seaford Chalk Formation

Bedrock deposits attributed to the Seaford Chalk Formation were encountered at all intrusive locations and were found to directly underlie Topsoil, Made Ground or Head Deposits. Bedrock deposits were laterally continuous across the site.

Bedrock deposits of the Seaford Chalk Formation are considered to be Grade C4. Bedrock generally comprised a weak medium density white with frequent black specks CHALK. Fractures were closely spaced, open and generally infilled with uncompact light creamish brown, silt sized comminuted chalk. Fractures within the rock ranged between 20mm-60mm with a typical aperture of >3mm. Sparse horizontal band of cobble sized flint at depths of approximately 2.00-2.50m bgl. CIRIA C574 – *Engineering in Chalk* suggests in-situ observations, by means of trial pit excavation, is the most reliable way of identifying chalk grade.

It should be noted that SPT N values of N=>25 were recorded from depths of 1.00m bgl within all borehole locations. It is therefore considered that the structureless nature of the chalk described from borehole locations (Grade Dm and Grade Dc), within Appendix III, is the result of the percussive drilling technique. SPT N values of N=>25 are commonly interpreted as being indicative of the presence of structural Chalk, and it is therefore considered that structural Chalk is also present within all borehole locations advanced across the site.

Bedrock deposits were encountered from a minimum depth of 0.15 m bgl (WS101) to a maximum proven depth of 11.00 m bgl (BH103). The maximum encountered thickness was 10.70m at location BH103 .

The base of the Seaford Chalk Formation was not encountered within any intrusive locations.

6.2 Laboratory Classification Analysis

Soil classification testing, comprising in-situ soaked California Bearing Ratio Testing is summarised below with analysis certificates presented in Appendix VIII.

6.2.1 Laboratory California Bearing Ratio (CBR) Testing

Six (6no.) soaked recompacted laboratory CBR test was undertaken on samples from the proposed areas of roadways across the site, as shown in Figure 2.0 and 2.1 in Appendix III. Results are summarised below in Table 6.1 and presented in Appendix VIII.

Table 6.1 Summary of California Bearing Ratios

CBR VALUE (%)							
Location	**Depth**	**Test Location**	**2.5mm**	**5mm**	**Highest**	**Moisture Content (%)**	**Average**
TP101	0.30-0.70	TOP	0.62	1.3	1.3	31	-
		BASE	1.5	2.1	2.1	31	
TP104	0.50-1.00	TOP	1.2	1.9	1.9	28	-
		BASE	0.8	1.2	1.2	29	
TP105	0.30–0.89	TOP	0.7	1.1	1.1	30	-
		BASE	1.1	1.3	1.3	30	
TP107	0.20-0.80	TOP	0.6	1.1	1.1	30	-
		BASE	1.7	1.9	1.9	30	
TP108	0.45-1.00	TOP	0.6	1.1	1.1	28	-
		BASE	1.2	1.9	1.9	28	
TP110	0.15-0.70	TOP	0.8	1.3	1.3	28	1.3
		BASE	0.8	1.2	1.2	28	

Soaked CBR graphs are presented in Appendix VIII. Samples were soaked for between 7-9 days.

6.2.2 pH and Sulphate

Chemical analysis for pH and soluble sulphate content are summarised in Table 6.2 below with analysis certificates presented as Appendix VI.

Table 6.2 Summary of pH and Sulphate Data

Location	Depth (m bgl)	SO_4 in 2:1 water / soil (mg/l)	pH Value
TP101	0.50-0.60	3.5	9.3
TP102	2.00-2.10	<1.5	9.25
TP104	0.20-0.30	2.4	9.22
TP106	0.20-0.30	<1.5	8
WS101	0.10-0.15	<1.5	7.97
WS102	0.20-0.30	<1.5	8.53
WS103	1.10-1.20	<1.5	9.24
WS104	0.30-0.40	<1.5	7.91
WS107	0.10-0.20	<1.5	8.02
	2.50-2.60	<1.5	9.31
WS108	0.10-0.20	<1.5	8.72
WS109	0.30-0.40	<1.5	7.76
WS111	0.30-0.40	<1.5	7.24
WS113	0.20-0.30	1.8	8.81
WS114	0.70-0.80	<1.5	9.22
WS118	0.10-0.40	<1.5	8.09
WS121*	0.10-0.40	69.7	7.76
WS122*	0.60-0.70	24.5	8.06
	1.00-1.10	31.6	8.22
	1.15-1.25	19	8.23
WS123*	0.40-0.50	<1.5	8.24
WS125	0.10-0.20	37.9	7.94
WS126*	0.30-0.40	<1.5	8.04
	1.80-1.90	85.9	8.07
BH101	5.00	3.8	9.22
	9.50	4.8	9
BH102	6.50	4.6	9.13
BH103	3.00	2.9	9
	11.00	4.8	9.12

***Significant thicknesses of Made Ground were encountered within these locations, located in the northernmost section of the site.**

Due to the undeveloped nature of the site and long-standing historical use of the site as fields, the site has been classified utilising Table C1 of BRE Special Digest 1 (2005) for a Greenfield development. However, it should be noted that within locations WS121, WS122, WS123 and WS126 a significant thickness of Made Ground was encountered, and this localised area, to the north of the site, has been classified utilising Table C2 of BRE Special Digest 1 (2005) for a Brownfield development accordingly.

With the exception of the northernmost area (see below) soils across the site have been classified as DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1 for a Greenfield Site. This classification has been calculated utilising the mean of the highest 20% sulphate results and the mean of the lowest 20% pH values as stated in BRE Special Digest (2005) for sites where a data set of

greater than ten is available, giving a site characteristic value for sulphate of 4.5 mg/l and a pH value of 7.66.

Locations WS121, WS122, WS123 and WS126 (Northernmost area of the site)

Within the northernmost area of the site where significant thicknesses of Made Ground were encountered soils have been classified as DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1 for a Brownfield Site. This classification has been calculated using the highest measured sulphate concentration and the lowest measured pH value as stated in the BRE Special Digest (2005) producing a site characteristic value for sulphate of 69.7 mg/l and a pH value of 7.76.

6.3 In-Situ Testing

6.3.1 Standard Penetration Tests (SPT)

Standard Penetration Tests (SPT) were carried out in all windowless sampling and cable percussive boreholes in accordance with techniques outlined in BS1377, to assess the strength/density of the underlying strata. The 'N' value (number of blows per 300mm penetration) was recorded for each test. The SPT 'N' values are presented on the relevant exploratory hole records and summarised in Table 6.3 below.

Table 6.3 Summary of SPT Values

Location	Start Depth (m bgl)	Strata Type	CPT/SPT "N" Value	Terzaghi and Peck Approximate Undrained Shear Strength (kN/m^2)**	BS5930 Soil Strength (Cohesive)	BS5930 Soil Density (Granular)
BH101	1.00	Chalk	36	-	-	-
	2.00	Chalk	35	-	-	-
	3.00	Chalk	32	-	-	-
	4.00	Chalk	35	-	-	-
	5.00	Chalk	21	-	-	-
	6.50	Chalk	42	-	-	-
	8.00	Chalk	33	-	-	-
	9.50	Chalk	50	-	-	-
BH102	1.00	Chalk	50	-	-	-
	2.00	Chalk	41	-	-	-
	3.00	Chalk	40	-	-	-
	4.00	Chalk	30	-	-	-
	5.00	Chalk	50	-	-	-
	6.50	Chalk	32	-	-	-
	8.00	Chalk	50	-	-	-
	9.50	Chalk	46	-	-	-
BH103	1.00	Chalk	14	-	-	-
	2.00	Chalk	9	-	-	-
	3.00	Chalk	26	-	-	-
	4.00	Chalk	24	-	-	-
	5.00	Chalk	20	-	-	-
	6.50	Chalk	26	-	-	-

	8.00	Chalk	29	-	-	-
	9.50	Chalk	31	-	-	-
WS101	1.00	Chalk	30	-	-	-
	2.00	Chalk	22	-	-	-
	3.00	Chalk	54	-	-	-
WS102	1.00	Chalk	33	-	-	-
	2.00	Chalk	27	-	-	-
	3.00	Chalk	32	-	-	-
	3.80	Chalk	55	-	-	-
WS103	1.00	Chalk	20	-	-	-
	1.60	Chalk	42	-	-	-
	2.60	Chalk	29	-	-	-
	3.60	Chalk	52	-	-	-
WS104	1.00	Chalk	23	-	-	-
	2.00	Chalk	40	-	-	-
	3.00	Chalk	31	-	-	-
	3.50	Chalk	54	-	-	-
WS105	1.00	Chalk	32	-	-	-
	2.00	Chalk	42	-	-	-
	3.00	Chalk	44	-	-	-
WS106	1.00	Chalk	26	-	-	-
	2.00	Chalk	53	-	-	-
WS107	1.00	Chalk	32	-	-	-
	2.00	Chalk	54	-	-	-
WS108	1.00	Chalk	50	-	-	-
WS109	1.00	Chalk	29	-	-	-
	1.60	Chalk	40	-	-	-
	2.60	Chalk	57	-	-	-
WS110	1.00	Chalk	28	-	-	-
	1.70	Chalk	53	-	-	-
WS111	1.00	Chalk	33	-	-	-
	2.00	Chalk	43	-	-	-
	2.60	Chalk	50	-	-	-
WS112	1.00	Chalk	43	-	-	-
	2.00	Chalk	32	-	-	-
	3.00	Chalk	56	-	-	-
WS113	1.00	Chalk	50	-	-	-
WS114	1.00	Chalk	29	-	-	-
	1.60	Chalk	38	-	-	-
WS115	1.00	Chalk	30	-	-	-
	1.70	Chalk	51	-	-	-
WS116	1.00	Chalk	21	-	-	-
	2.00	Chalk	59	-	-	-
WS117	1.00	Chalk	29	-	-	-
	2.00	Chalk	39	-	-	-
	3.00	Chalk	56	-	-	-
WS118	1.00	Chalk	40	-	-	-
	1.60	Chalk	25	-	-	-
	2.50	Chalk	50	-	-	-
WS119	1.00	Chalk	27	-	-	-
	1.80	Chalk	55	-	-	-

WS120	1.00	Chalk	31	-	-	-
	2.00	Chalk	50	-	-	-
WS121	1.00	Chalk	24	-	-	-
	2.00	Chalk	18	-	-	-
	3.00	Chalk	18	-	-	-
	3.90	Chalk	31	-	-	-
WS122	1.00	Made Ground	18	-	-	-
	1.90	Cohesive	11	49.5	Medium	-
	2.90	Chalk	24	-	-	-
	3.90	Chalk	16	-	-	-
	4.90	Chalk	50	-	-	-
WS123	1.00	Made Ground	24	-	-	-
	2.00	Made Ground	8	-	-	-
	3.00	Made Ground	11	-	-	-
	4.00	Chalk	24	-	-	-
	4.60	Chalk	17	-	-	-
WS124	1.00	Chalk	30	-	-	-
	1.80	Chalk	29	-	-	-
	2.80	Chalk	20	-	-	-
	3.70	Chalk	30	-	-	-
	4.70	Chalk	33	-	-	-
WS125	1.00	Granular	18	-	-	Medium dense
	2.00	Chalk	18	-	-	-
	3.00	Chalk	22	-	-	-
	4.00	Chalk	26	-	-	-
	5.00	Chalk	24	-	-	-
WS126	1.00	Made Ground	16	-	-	-
	2.00	Chalk	19	-	-	-
	3.00	Chalk	18	-	-	-
	4.00	Chalk	16	-	-	-
	5.00	Chalk	28	-	-	-

**** Approximate Undrained Shear Strength calculated using the empirical relationship of C_u = SPT N x 4.5**

Referring to Table 6.3 the Soil Strength for Cohesive soils, from a single location (WS122) is medium. The Soil Density for Granular soils, from a single location (WS125) is Medium dense. However, the results are not representative of the site and only relate to the limited Head Deposits identified in the northernmost area of the site.

6.3.2 Plate Load Testing

In-situ testing in the form of Plate Load Testing, was undertaken at nine (9no.) locations located within areas of proposed roadways. The results are presented in Table 6.4 and in Appendix IX.

Table 6.4 Summary of Plate Load Testing Results

Location	Depth (mm bgl)	CBR Value (%)
PLT01	470	6.9
PLT02	400	Test Unsuccessful
PLT03	250	Test Unsuccessful
PLT04	260	25.2

PLT05	200	6.9
PLT06	380	Test Unsuccessful
PLT07	390	27.2
PLT08	400	Test Unsuccessful
PLT09	0	Test Unsuccessful

Where the test did not reach 1.25mm settlement a CBR value could not be calculated and therefore the test was deemed to have been unsuccessful.

Referring to Table 6.4 it can be seen that at a depth of 260mm bgl to 470mm bgl CBR values ranged from 6.9% to 25.2%. Adopting a conservative approach, it is considered that a design CBR value of 6.9% could be adopted for bedrock at a depth in excess of 470mm bgl across the site.

6.3.3 Soil Infiltration Testing – Falling Head Permeability Test

In-situ soil infiltration testing was undertaken in general accordance with BRE DG365 – *Soakaway Design* within the near surface at locations SA101-SA104 at depths ranging from 1.30 m bgl to 2.00 m bgl. Soil Infiltration test certificates are presented as Appendix X and summarised in Table 6.5 below.

Table 6.5 Summary of Soil Infiltration Testing

Location	Depth (m bgl)	Strata Type	Soil Infiltration Rate (m/s)		
			Test 1	Test 2	Test 3
SA101	1.30	Cohesive	$9.49x10^{-5}$	$7.82x10^{-5}$	$6.61x10^{-5}$
SA102	1.60	Cohesive	$1.30x10^{-4}$	$8.63x10^{-5}$	$7.04x10^{-5}$
SA103	1.63	Cohesive	$5.01x10^{-5}$	$3.55x10^{-5}$	$3.65x10^{-5}$
SA104	2.00	Cohesive	$1.77x10^{-4}$	$1.24x10^{-4}$	$2.36x10^{-4}$

Testing was undertaken at four (4no.) locations over durations of 50 minutes in SA101, 40 minutes in SA102, 70-90 minutes in SA103 and 15 to 30 minutes in SA104.

SA101
Testing at location SA101 was successful with both the 25% and 75% effective storage depth intercepts being reached. The location was refilled twice and a total of three (3no.) infiltration tests were undertaken in quick succession within SA101 in accordance with BRE Digest 365, yielding an infiltration rate ranging from $6.61x10^{-5}$ to $9.49x10^{-5}$ m/s indicating low to medium permeability with good drainage conditions.

SA102
Testing at location SA102 was successful with both the 25% and 75% effective storage depth intercepts being reached. The location was refilled twice and a total of three (3no.) infiltration tests were undertaken in quick succession within SA102 in accordance with BRE Digest 365, yielding an infiltration rate ranging from $1.30x10^{-4}$ to $8.63x10^{-5}$ m/s indicating medium and low to medium permeability, respectively, with good drainage conditions.

SA103
Testing at location SA103 was successful with both the 25% and 75% effective storage depth intercepts being reached. The location was refilled twice and a total of three (3no.) infiltration tests were undertaken in quick succession within SA103 in accordance with BRE Digest 365, yielding an infiltration

rate ranging from $3.55x10^{-5}$ to $5.01x10^{-5}$ m/s indicating low to medium permeability with good drainage conditions.

SA104
Testing at location SA104 was successful with both the 25% and 75% effective storage depth intercepts being reach. The location was refilled twice and a total of three (3no.) infiltration tests were undertaken in quick succession within SA104 in accordance with BRE Digest 365, yielding an infiltration rate ranging from $1.24x10^{-4}$ and $2.36x10^{-4}$ m/s indicating medium permeability with good drainage conditions.

The adoption of soakaway drainage will ultimately be dependent on the specific requirements of the development. Given the good infiltration rates ($1.24x10^{-4}$ m/s to $9.49x10^{-5}$ m/s) across the site it is considered that soils underlying the site may prove suitable for the adoption of conventional soakaway drainage. However, 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*.

6.4 Groundwater Conditions

No groundwater was encountered in any of the intrusive locations.

6.5 Ground Gas and Groundwater

The results of the gas and groundwater monitoring are presented in Table 6.6 overleaf.

Table 6.6 Summary of Ground Gas and Groundwater Monitoring Results

Well	Date	CH_4 Peak %v/v	CH_4 Steady %v/v	CH_4 GSV l/hr	CO_2 Peak %v/v	CO_2 Steady %v/v	CO_2 GSV l/hr	O_2 %v/v	Atmos (mb)	Atmos. Dynamic	Flow (l/hr)	Depth to Base (m bgl)	Depth to Water (m bgl)
WS104	03/09/2018	<0.1	<0.1	0.0001	1.4	1.4	0.0014	20.0	1009	Falling	0.1	2.98	Dry
	10/09/2018	<0.1	<0.1	0.0001	1.2	1.2	0.0012	21.2	1012	Falling	0.1	3.20	Dry
	17/09/2018	<0.1	<0.1	0.0002	1.2	1.2	0.0024	20.4	1003	Falling	0.2	3.11	Dry
WS106	03/09/2018	<0.1	<0.1	0.0001	2.0	2.0	0.0002	18.3	1010	Falling	<0.1	2.25	Dry
	10/09/2018	<0.1	<0.1	0.0001	1.9	1.9	0.0019	20.2	1012	Falling	0.1	2.20	Dry
	17/09/2018	<0.1	<0.1	0.0001	1.6	1.6	0.0016	20.0	1004	Falling	0.1	2.13	Dry
WS108	03/09/2018	<0.1	<0.1	0.0001	1.1	1.1	0.0011	19.6	1009	Falling	0.1	1.14	Dry
	10/09/2018	<0.1	<0.1	0.0001	1.0	1.0	0.001	20.6	1012	Falling	0.1	1.20	Dry
	17/09/2018	<0.1	<0.1	0.0001	0.9	0.9	0.0009	19.9	1003	Falling	0.1	1.13	Dry
WS112	03/09/2018	<0.1	<0.1	0.0001	1.1	1.1	0.0011	18.9	1009	Falling	0.1	2.68	Dry
	10/09/2018	<0.1	<0.1	0.0001	0.9	0.9	0.0009	20.4	1012	Falling	0.1	2.88	Dry
	17/09/2018	<0.1	<0.1	0.0001	0.9	0.9	0.0009	20.1	1004	Falling	0.1	2.77	Dry
WS118	03/09/2018	<0.1	<0.1	0.0001	1.7	1.7	0.0017	18.9	1009	Falling	0.1	2.41	Dry
	10/09/2018	<0.1	<0.1	0.0002	1.6	1.6	0.0032	21.0	1012	Falling	0.2	2.61	Dry
	17/09/2018	<0.1	<0.1	0.0001	1.4	1.4	0.0014	20.3	1003	Falling	0.1	2.53	Dry
WS126	03/09/2018	<0.1	<0.1	0.0001	2.4	1.7	0.0024	17.1	1008	Falling	<0.1	3.00	Dry
	10/09/2018	<0.1	<0.1	0.0001	1.9	1.8	0.0019	19.7	1011	Falling	<0.1	3.18	Dry
	17/09/2018	<0.1	<0.1	0.0001	1.6	1.5	0.0016	19.0	1004	Falling	0.1	3.10	Dry

7.0 TIER 1 QUALITATIVE CONTAMINATED LAND RISK ASSESSMENT

OEC has undertaken a Tier 1 qualitative risk assessment to determine if any potential contaminants within the underlying soils pose an unacceptable level of risk to the identified receptors.

7.1 Human Health Risk Assessment

At a Tier 1 stage the long term (chronic) human health toxicity of the soil has been assessed by comparing the on-site concentrations of organic and inorganic compounds with reference values published by the EA (Contaminated Land Exposure Assessment (CLEA) Soil Guideline Values (SGV)) and where absent, Generic Assessment Criteria (GACs) published by LQM/CIEH Suitable for Use Levels (S4UL) 2015. Based on the proposed residential end use with private gardens, OEC has adopted screening values for a residential end use with home grown produce. The origin of the GAC values are presented within Appendix VII.

The results of this comparison have been summarised within Table 7.1.

Table 7.1 Summary of Inorganic and Hydrocarbon Toxicity Assessment for a Residential End Use with Home Grown Produce

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
Inorganic							
Arsenic	mg/kg	37	20	18.4	N/A	1	No Further Assessment
Boron	mg/kg	290	20	2.3	N/A	1	No Further Assessment
Beryllium	mg/kg	1.7	20	1.2	N/A	1	No Further Assessment
Cadmium	mg/kg	11	20	2.2	N/A	1	No Further Assessment
Chromium (III)	mg/kg	910	20	63.8	N/A	1	No Further Assessment
Chromium (VI)	mg/kg	6	20	<0.3	N/A	1	No Further Assessment
Copper	mg/kg	2400	20	13	N/A	1	No Further Assessment
Lead	mg/kg	200	20	26	N/A	1	No Further Assessment
Mercury	mg/kg	40	20	<0.1	N/A	2	No Further Assessment
Nickel	mg/kg	180	20	26.9	N/A	1	No Further Assessment
Selenium	mg/kg	250	20	1	N/A	1	No Further Assessment
Vanadium	mg/kg	410	20	44	N/A	1	No Further Assessment
Zinc	mg/kg	3700	20	155	N/A	1	No Further Assessment
General Inorganics							
Asbestos	-	N.D[iv]	20	NAD	N/A	4	No Further Assessment
Cyanide	mg/kg	50	20	<0.5	N/A	1	No Further Assessment
General Organics							
Phenol	mg/kg	280	20	0.15	N/A	1	No Further Assessment
PAH							
Naphthalene	mg/kg	2.3	20	<0.04	N/A	2	No Further Assessment
Acenaphthylene	mg/kg	170	20	0.04	N/A	3	No Further Assessment
Acenaphthene	mg/kg	210	20	<0.05	N/A	1	No Further Assessment
Fluorene	mg/kg	170	20	<0.04	N/A	1	No Further Assessment
Phenanthrene	mg/kg	95	20	0.22	N/A	3	No Further Assessment
Anthracene	mg/kg	2400	20	0.1	N/A	3	No Further Assessment
Fluoranthene	mg/kg	280	20	0.42	N/A	3	No Further Assessment
Pyrene	mg/kg	620	20	0.41	N/A	3	No Further Assessment
Benzo(a)Anthracene	mg/kg	7.2	20	0.26	N/A	3	No Further Assessment
Chrysene	mg/kg	15	20	0.2	N/A	3	No Further Assessment
Benzo(b)Fluoranthene	mg/kg	2.6	20	0.26	N/A	3	No Further Assessment

Determinant	Units	GAC	n	MC	Loc. of Ex	Pathway	Assessment
Benzo(k)Fluoranthene	mg/kg	77	20	0.1	N/A	3	No Further Assessment
Benzo(a)Pyrene	mg/kg	2.2	20	0.20	N/A	3	No Further Assessment
Indeno(123-cd) Pyrene	mg/kg	27	20	0.14	N/A	3	No Further Assessment
Dibenzo(a,h)Anthracene	mg/kg	0.24	20	<0.04	N/A	3	No Further Assessment
Benzo(ghi)Perylene	mg/kg	320	20	0.14	N/A	3	No Further Assessment
Banded TPH							
TPH C_5-C_6 (aliphatic)*	mg/kg	42	20	<0.1	N/A	2	No Further Assessment
TPH C_6-C_8 (aliphatic)*	mg/kg	100	20	<0.1	N/A	2	No Further Assessment
TPH C_8-C_{10} (aliphatic)*	mg/kg	27	20	<5	N/A	2	No Further Assessment
TPH C_{10}-C_{12} (aromatic)*	mg/kg	74	20	<10	N/A	1	No Further Assessment
TPH C_{12}-C_{16} (aromatic)*	mg/kg	140	20	35	N/A	1	No Further Assessment
TPH C_{16}-C_{21} (aromatic)*	mg/kg	260	20	239	N/A	1	No Further Assessment
TPH C_{21}-C_{40} (aromatic)*	mg/kg	1100	20	859	N/A	1	No Further Assessment
Pesticides							
DDE	mg/kg	2.0	2	<0.1	N/A	1	No Further Assessment
DDT	mg/kg	1.9	2	<0.1	N/A	1	No Further Assessment
Aldrin	mg/kg	5.7	2	<0.1	N/A	1	No Further Assessment
Dieldrin	mg/kg	0.97	2	<0.1	N/A	1	No Further Assessment
Endosulfan I	mg/kg	7.4	2	<0.1	N/A	1	No Further Assessment
Endosulfan II	mg/kg	7.0	2	<0.1	N/A	1	No Further Assessment

Notes
Main Exposure Pathways: 1 = Soil Ingestion, 2 = Vapour Inhalation (indoor), 3 = Dermal Contact & Ingestion, 4 = Dust Inhalation.
Abbreviations: GAC = General Assessment Criteria, n = number of samples, MC = Maximum Concentration; Loc of Ex = Location of Exceedance.
* The Tier 1 GAC for the hydrocarbon fraction is derived from the CIEH/S4UL assessment for petroleum hydrocarbons Criteria Working Group (CWG) for both aliphatic and aromatic compounds. OEC has utilised the lowest of the aliphatic and aromatic chain lengths in order to adopt a conservative approach, which is considered satisfactory for the protection of human health.

Two composite samples (0.10 – 0.40 and 0.20 – 0.30m bgl) were submitted for a suite of herbicide and pesticides. The results of this analysis indicated that all determinants were present at concentrations of less than the laboratory Limit of Detection (LOD) of 0.1mg/kg.

Referring to Table 7.1 the results of this direct comparison indicates that there have been no exceedances of the adopted Tier I screening criteria.

7.2 Controlled Waters

Although no elevated concentrations of inorganics were identified at the site, the site is not considered to present a potential risk to controlled waters for the following reasons:

- No Tier 1 exceedances were identified have been identified in the near surface soils; and,
- Groundwater was not encountered across the site and based on BGS Hydrogeological Mapping groundwater in the Chalk is anticipated at a depth of approximately 25m bgl (75m AOD).

However, given that Chalk is present within the near surface it is recommended that suitable containment measures are implemented during the construction phase to minimise the risk of fuel spillages impacting the underlying Principal Aquifer.

7.3 Ground Gas Assessment

The potential impact on the development from ground gases has been assessed with reference to standards and guidelines published in CIRIA Report C665 (*Assessing risks posed by hazardous ground gases to buildings*, 2007). However, it is recommended that the full ground gas assessment and any recommended protection measures are agreed with the local authority prior to the adoption of any protection measures on-site. Furthermore, the installation of any gas protection measures should be validated by a suitably qualified engineer.

The results of the ground gas monitoring and calculated Gas Screening Values (GSVs) are presented in Table 6.5.

Three ground gas monitoring visits have been undertaken at locations WS104, WS106, WS108, WS112, WS118 and WS126 with no concentrations of CH_4 greater than the equipment limit of detection (LOD) of 0.1% v/v being recorded. Carbon Dioxide (CO_2) concentrations were recorded to a maximum of 2.00% v/v at location WS106, on the 3rd September 2018. Negligible ground gas flow was recorded at the site with a maximum flow rate of 0.2l/hr recorded.

In accordance with the methodology outlined within the CIRIA publication C665, OEC have utilised the results of the ground gas monitoring visits to calculate tentative GSVs, utilising the peak recorded CH_4 and CO_2 concentrations and flow rate (l/hr). The maximum recorded GSV calculated for methane was 0.0002l/hr whilst the maximum recorded GSV for carbon dioxide was 0.0032l/hr.

It is understood that the proposed development will comprise the erection of at least 300 new residential houses with associated private gardens and car parking. It is understood at this stage that the development is likely to comprise of predominantly low rise housing. The proposed development has therefore been classified as **Situation B** as set out in CIRIA C665 and the gas assessment has been undertaken in accordance with the NHBC Traffic Light System.

7.3.1 NHBC Traffic Light System - Situation B - Low Rise Housing

Guidance set out in CIRIA C665, stipulates a maximum GSV for methane of 0.16hr/l and carbon dioxide of 0.78l/hr, with typical maximum permissible concentrations of 1% v/v (CH_4) and/or 5% v/v (CO_2) for classification as Green under the NHBC Traffic Light System.

The maximum recorded concentrations and GSV for CH_4 (0.0002l/hr) and CO_2 (0.0024l/hr) meet the criteria for classification as **Green**. It is therefore considered that a **Green** classification is suitable for the proposed low-rise housing at the site. A NHBC Green classification is indicative of a negligible ground gas regime and no special ground gas protection measures are required in the construction of new dwellings or extensions.

8.0 REVISED CONCEPTUAL SITE MODEL

Following completion of the Tier 1 risk assessment no active pollution pathways have been identified based on a residential end use with homegrown produce. It is therefore considered that the site is suitable for its intended end use.

9.0 GEOTECHNICAL ASSESSMENT

9.1 Proposed Development

It is understood that the proposed development is for a residential end use through the construction of approximately 300 residential units with associated parking, infrastructure, gardens and communal areas. We understand, at this stage, that the build type of the units will be predominantly low-rise housing.

9.2 Site Preparation

Any roots present below the footprint of proposed structures and infrastructure should be grubbed out and the resulting voids in-filled with suitable compacted material. This should also be undertaken for any redundant or re-routed services.

9.3 Encountered Ground Conditions

Topsoil generally comprised grass cover over a brown gravelly fine to medium SAND. The gravel component is angular to subrounded fine to coarse of flint and chalk. Deposits were encountered to a maximum observed depth of 0.80m bgl.

Made Ground
Made Ground deposits were encountered within intrusive locations WS122, WS123, WS126, TP111, TP113, TP114 and SA104. Made Ground was found to comprise grass cover over a brown angular to subrounded fine to coarse sandy GRAVEL of flint and chalk, with anthropogenic material comprising cobbles of brick, concrete, occasional plastic, wood and rare asphalt. Made Ground was recorded to a maximum thickness of 3.50m within WS123.

Superficial Deposits
Superficial deposits were encountered within locations WS122, WS124, WS125 and TP111. Superficial deposits comprised of three distinct units, summarised as follows; the first unit comprised a firm orangeish brown gravelly CLAY with varying sand content. The second unit comprised a brown gravelly medium to coarse SAND and the third unit comprised a light brownish grey, angular to subrounded, fine to coarse sandy GRAVEL.

Bedrock Deposits – Seaford Chalk Formation
Bedrock encountered on site is considered to be Grade C4 structured chalk. Trial pits locations were used to Grade the chalk in accordance with specification outlined in CIRIA C574. Bedrock generally comprised a weak, medium density white with frequent black specks CHALK. Fractures were closely spaced, open and generally infilled with uncompact light creamish brown, silt sized comminuted chalk. Fractures within the rock ranged between 20mm-60mm with a typical aperture of >3mm. Sparse horizontal band of cobble sized flint at depths ranging from 1.00-2.50m bgl.

Chalk bedrock was recovered as structureless chalk within all borehole locations due to the percussive nature of drilling. However, given that Grade C4 structural Chalk was identified within trial pit locations together with the face that SPT N values of N=>25 were recorded from depths of 1.00m bgl within borehole locations, it is considered that structural Chalk was encountered within all borehole locations.

9.4 Foundation Conditions and Bearing Capacity

The following geotechnical assessment has been undertaken based on in-situ testing, laboratory analysis, and descriptions on the underlying geology. Foundation depths presented are indicative only based on a minimum presumed bearing value for a particular foundation type. Line loadings have not been made available such that the final depth and type of foundation required following design could vary.

With reference to engineer logs, detailed in Appendix V, grading of the chalk has been identified as C4, confirmed from observations within trial pit logs.

Laboratory testing of the chalk indicates that intact dry density of the selected samples range from 1.37Mg/m^3-1.46Mg/m^3 with moisture contents of approximately 20%. Utilising Table 9.2 of CIRIA C574 – *Engineering in Chalk* this corresponds to the upper limit of low density chalk and the lower limit of medium density chalk. In situ testing by means of Plate Load Testing was also conducted on the chalk bedrock. Maximum settlement was recorded at 2.4mm within the bedrock chalk, maximum loads applied within the test were in excess of 277kN/m^2. Referring to Table 6.4 within the report unsuccessful CBR tests were recorded, these tests did not reach the maximum 1.25mm settlement, indicating competent bedrock chalk within minimal deflection.

Minimum presumed bearing capacities for shallow foundations in chalk are detailed within Table 2 of BS 8004:1986. Referring to in-situ testing and engineer descriptions the chalk indicates a medium density. It is presumed to have a minimum presumed bearing capacity of approximately 300kN/m^2, based on bearing values outlined in CIRIA C574, bearing onto competent chalk at a depth of approximately 1.00m below existing site levels.

It is recommended, in accordance with CIRIA C574 and in British Standard 8004:1986 – *Foundations*, that a minimum foundation depth of 450mm bgl is adopted for foundations in chalk due to the bedrock chalk having a high susceptibility to frost heave.

Particular consideration should be made to the great thicknesses of Made Ground within the northern section of the site (WS122, WS123, WS126, TP111, TP113, TP114 and SA104, up to 3.00m of Made Ground). Due to the potential differential settlement other means of foundation type should be considered (e.g. trench fill, raft foundations) and may involve locally deepening foundations within this area as presumed loads would be insufficient in the Made Ground.

Indicative values are given presuming only vertical stresses are applied to the shallow foundation in the chalk. It is recommended that the advice of a specialist foundation contractor is sought to further discuss proposed layout and confirm capacity with regards to the encountered ground conditions. Again, please note that these values for foundations should not be considered as design values and are provided for information purposes such that they should not be relied upon without review and consultation with a design engineer.

9.5 Ground Floor Slabs

It is considered that ground floor slabs may be suitable to bear into the bedrock, subject to suitable design. However, where Made Ground is encountered in excess of 600mm it is considered that ground floor slabs are not suitable for adoption and a suspended floor slab should be adopted.

Where the nature of the ground varies it is considered that a suspended floor slab should be adopted to mitigate against the effects of differential settlement across the site.

If levels were to be changed on site requiring steps in the substructure, further consideration should be given to the adoption of floor slabs, with reference to NHBC Standards (2011) 5.1 – *Substructure and ground bearing floors*.

9.6 Pavement Construction

An assessment of the likely CBR for the near surface materials has been assessed from the following sources:

- In-situ CBR tests undertaken using a Plate Load Test;
- Laboratory soaked recompacted CBR tests; and,
- Descriptions of near surface strata encountered within exploratory hole locations.

Referring to Table 6.4 it can be seen that at a depth of 260mm bgl to 470mm bgl CBR values ranged from 6.9% to 25.2%. Adopting a conservative approach, it is considered that a design CBR value of 6.9% could be adopted for a depth in excess of 470mm bgl across the site but confirmatory testing should be carried out at confirmed formation level prior to final design.

Laboratory in situ testing yielded results from 1.2% to 2.1%, with data presented in Table 6.1.

9.7 Concrete Durability

Soils have been classified as DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1, as discussed in Section 6.2.2.

10.0 CONCLUSIONS AND RECOMMENDATIONS

Revised Conceptual Site Model
Following completion of the Tier 1 risk assessment no elevated concentrations were identified. It is therefore considered that no potentially active pollution linkages have the potential to present a significant risk to human health.
Concrete Classification
Soils have been classified as DS-1, Aggressive Chemical Environment for Concrete Classification (ACEC) AC-1 for a Greenfield Site.
Ground Gas Classification
A preliminary ground gas classification has classified low-rise housing as Green under the NHBC Traffic Light Classification in accordance with guidance set out in CIRIA C665. Classification of the site as Green indicates a negligible ground gas regime and does not require the installation of any special ground gas protection measures.
Geotechnical Assessment
The following geotechnical assessment has been undertaken based on in-situ testing, laboratory analysis, and descriptions on the underlying geology. Foundation depths presented are indicative only based on a minimum presumed bearing value for a particular foundation type. Line loadings have not been made available such that the final depth and type of foundation required following design could vary. With reference to engineer logs, detailed in Appendix V, grading of the chalk has been identified as C4, confirmed from observations within trial pit logs. Minimum presumed bearing capacities for shallow foundations in chalk are detailed within Table 2 of BS 8004:1986. Referring to in-situ testing and engineer descriptions the chalk indicates a medium density. It is presumed to have a minimum presumed bearing capacity of approximately 300kN/m^2, based on bearing values outlined in CIRIA C574, bearing onto competent chalk at a depth of approximately 1.00m below existing site levels. Particular consideration should be made to the great thicknesses of Made Ground within the northern section of the site. Due to potential differential settlement other means of foundation type should be considered (e.g. trench fill, raft foundations) and may involve locally deepening foundations within this area as presumed loads would be insufficient in the Made Ground. It is recommended, in accordance with CIRIA C574 and in British Standard 8004:1986 – *Foundations*, that a minimum foundation depth of 450mm bgl is adopted for foundations in chalk due to the bedrock chalk having a high susceptibility to frost heave. Indicative values are given presuming only vertical stresses are applied to the shallow foundation in the chalk. It is recommended that the advice of a specialist foundation contractor is sought to further discuss proposed layout and confirm capacity with regards to the encountered ground conditions. Again, please note that these values for foundations should not be considered as design values and are provided for information purposes such that they should not be relied upon without review and consultation with a design engineer.
Recommendations
Is it considered that the site is suitable for its intended use. However, if during the development stage any evidence of contamination is identified, works should be halted, and contact made with a suitably qualified Environmental Consultant. As determined appropriate by the Consultant, further investigation and sampling may be required to determine the appropriate actions. Upon completion contact should be made with the regulator to achieve sign off of the works.

APPENDIX I

LIMITATIONS

1. This report and its findings should be considered in relation to the terms of reference and objectives agreed between OEC 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.

9. OEC cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The copyright in this report and other plans and documents prepared by OEC is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of this may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by OEC in this connection without their explicit written agreement there to by OEC.

10. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

APPENDIX II

GLOSSARY

AST	ABOVE GROUND STORAGE TANK
BGS	BRITISH GEOLOGICAL SURVEY
BSI	BRITISH STANDARDS INSTITUTE
BTEX	BENZENE, TOLUENE, ETHYLBENZENE, XYLENES
CIEH	CHARTERED INSTITUTE OF ENVIRONMENTAL HEALTH
CIRIA	CONSTRUCTION INDUSTRY RESEARCH ASSOCIATION
CLEA	CONTAMINATED LAND EXPOSURE ASSESSMENT
CSM	CONCEPTUAL SITE MODEL
DNAPL	DENSE NON-AQUEOUS PHASE LIQUID (CHLORINATED SOLVENTS, PCB)
DWS	DRINKING WATER STANDARD
EA	ENVIRONMENT AGENCY
EQS	ENVIRONMENTAL QUALITY STANDARD
GAC	GENERAL ASSESSMENT CRITERIA
GL	GROUND LEVEL
GSV	GAS SCREENING VALUE
HCV	HEALTH CRITERIA VALUE
ICSM	INITIAL CONCEPTUAL SITE MODEL
LNAPL	LIGHT NON-AQUEOUS PHASE LIQUID (PETROL, DIESEL, KEROSENE)
ND	NOT DETECTED
LMRL	LOWER METHOD REPORTING LIMIT
NR	NOT RECORDED
PAH	POLY AROMATIC HYDROCARBON
PCB	POLY-CHLORINATED BIPHENYL
PID	PHOTO IONISATION DETECTOR
QA	QUALITY ASSURANCE
SGV	SOIL GUIDELINE VALUE
SPH	SEPARATE PHASE HYDROCARBON
SP.TPH (CWG)	TOTAL PETROLEUM HYDROCARBON (CRITERIA WORKING GROUP)
SPT	STANDARD PENETRATION TEST
SVOC	SEMI VOLATILE ORGANIC COMPOUND
UST	UNDERGROUND STORAGE TANK
VCCS	VIBRO CONCRETE COLUMNS
VOC	VOLATILE ORGANIC COMPOUND
WTE	WATER TABLE ELEVATION

UNITS

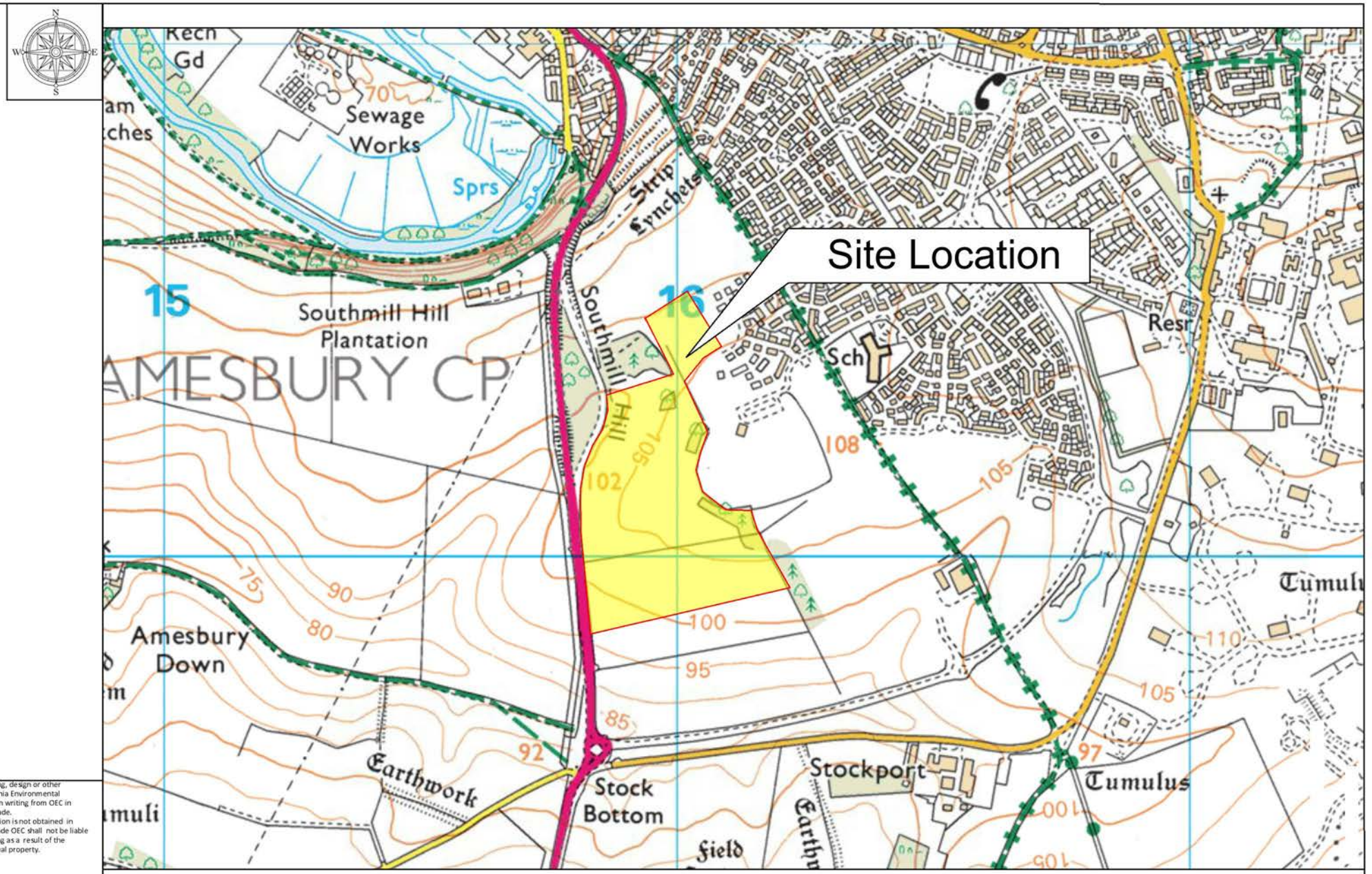
M	METRES
KM	KILOMETRES
%	PERCENT
%V/V	PERCENT VOLUME IN AIR
MB	MILLI BARS (ATMOSPHERIC PRESSURE)
L/HR	LITRES PER HOUR
µG/L	MICROGRAMS PER LITRE (PARTS PER BILLION)
PPB	PARTS PER BILLION
MG/KG	MILLIGRAMS PER KILOGRAM (PARTS PER MILLION)
PPM	PARTS PER MILLION
MG/M^3	MILLIGRAM PER METRE CUBED
M BGL	METRES BELOW GROUND LEVEL
M BCL	METRE BELOW COVER LEVEL

MAOD	METRES ABOVE ORDNANCE DATUM (SEA LEVEL)
KN/M^2	KILO NEWTONS PER METRE SQUARED
µM	MICRO METRE

APPENDIX III

DRAWINGS

Key



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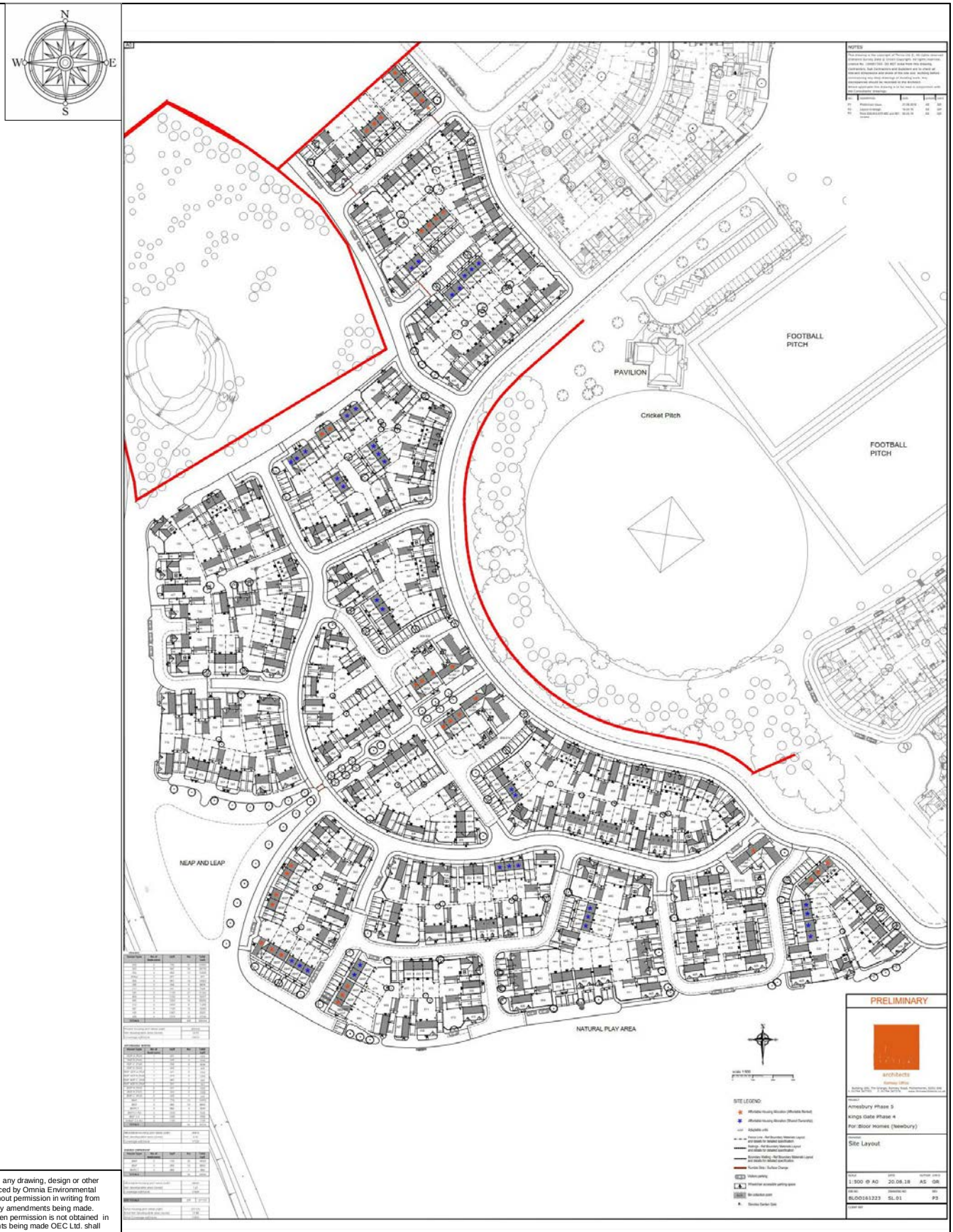
Job Title:	Client:	Project No:	Date:	Drawing Title:
Amesbury 299	Bloor Homes Southern	A11004	26/09/2018	Figure 1.0 - Site Location Plan
		Drawn By: G.Larcombe	Authorised By: T.Mitchell	
		Scale: 1:25 000	Notes:	



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Job Title:	Client:	Job No: A11004	DATE 07/06/2019	Drawing Title:
Amesbury 299	Bloor Homes Southern	Drawn by: G.Larcombe		Figure 2.0 - Proposed Development Plan
		Approved by: T.Mitchell		
		Scale: See Diagram		

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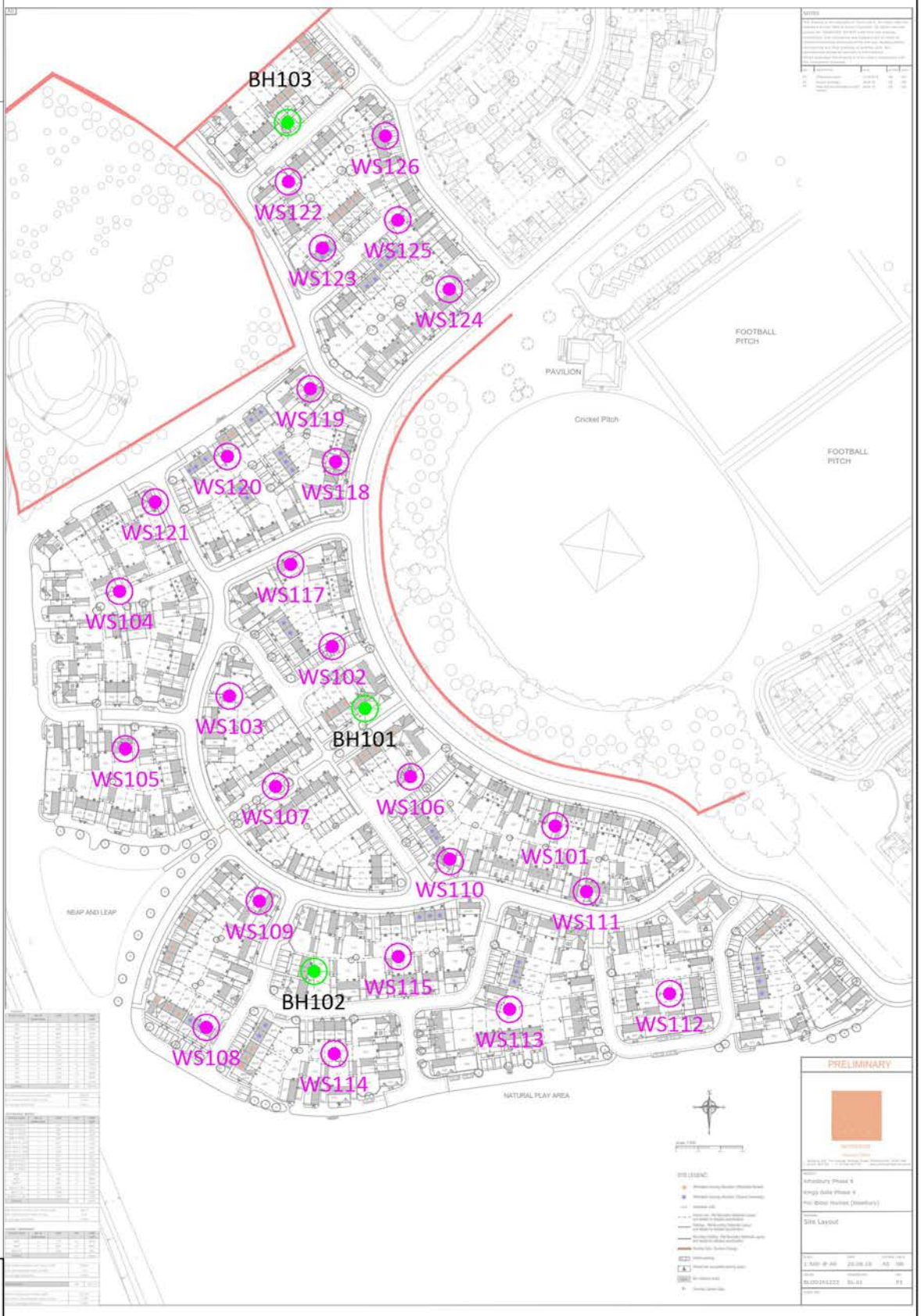

WS101 Approximate Window Sample Probehole Location

TP101 Approximate Trial Pit Location

SA101 Approximate Soakaway Location

CP101 Approximate Cable Percussive Borehole Location

PLT01 Approximate California Bearing Ratio Test Location

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Job Title:	Client:	Job No: A11004	DATE 07/06/2019	Drawing Title:
Amesbury 299	Bloor Homes Southern	Drawn by: G.Larcombe		Figure 3.0 - Intrusive Hole Plan (Window Sample and Cable Percussive Borehole)
		Approved by: T.Mitchell		
		Scale: See Diagram		

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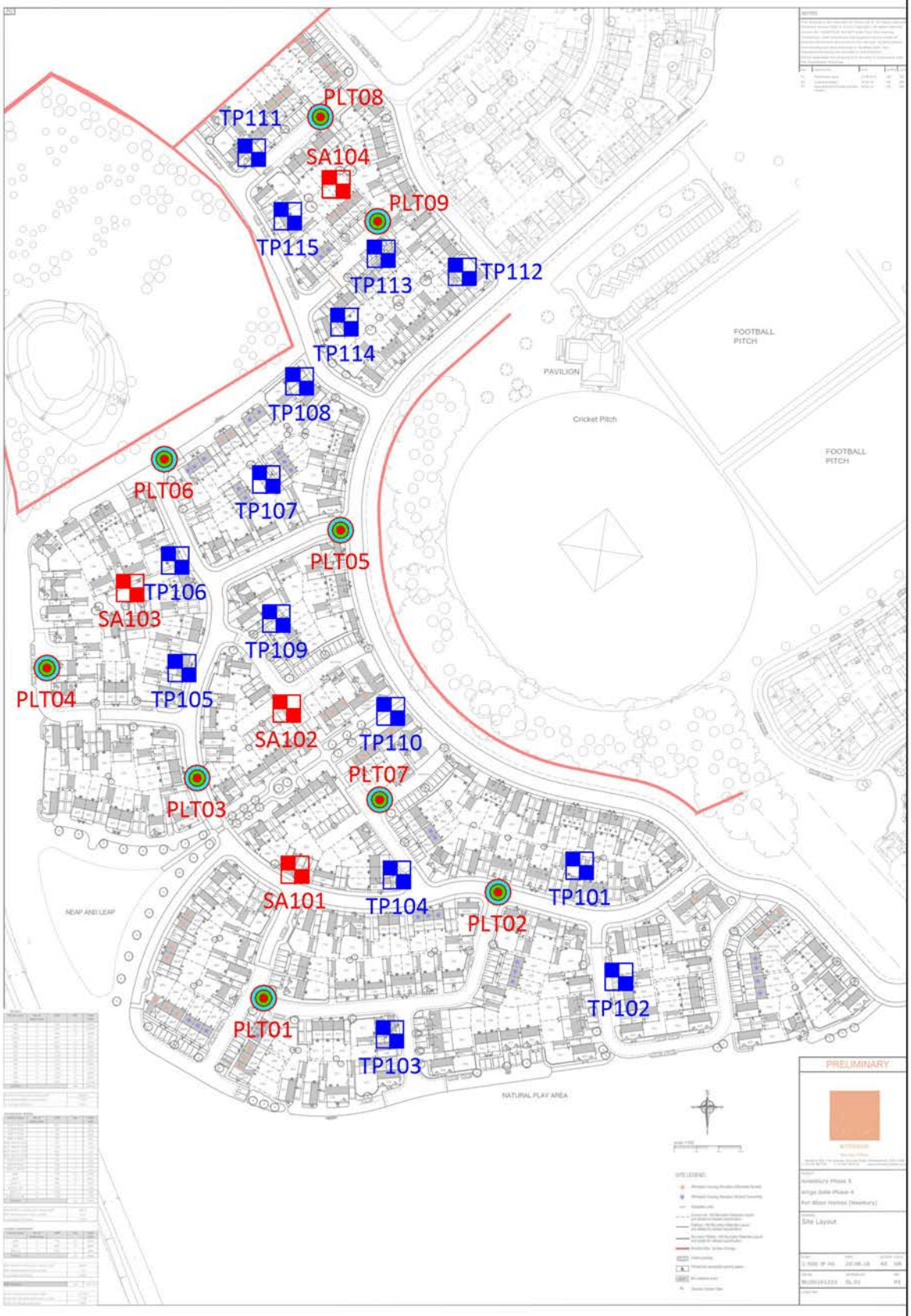

N
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Approximate Window Sample Probehole Location
WS101

Approximate Trial Pit Location
TP101

Approximate Soakaway Location
SA101

Approximate Cable Percussive Borehole Location
CP101

Approximate California Bearing Ratio Test Location
PLT01

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Job Title: Amesbury 299	Client: Bloor Homes Southern	Job No: A11004	DATE 07/06/2019	Drawing Title: Figure 3.1 - Intrusive Hole Plan (Window Sample and Cable Trial Pits and CBR Tests)
		Drawn by: G.Larcombe		
		Approved by: T.Mitchell		
		Scale: See Diagram		

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APPENDIX IV

PHOTOGRAPHS



Photograph 1 **Looking south from the central part of the site.**



Photograph 2 **Looking south-east from the eastern part of the site.**



Photograph 3 **Looking north towards the boundary between the central and northern fields, with the wider developing beyond.**



Photograph 4 **Looking to the west of the site, from a central location.**



Photograph 5 **In the southernmost part of the site, looking north-east onlooking the site compound area.**



Photograph 6 **In the south-east section of the site, near the site entrance, showing the large stockpile of building waste materials including brick and concrete rubble and miscellaneous building materials.**



Photograph 7 **Area to the north of the site with construction work taking place beyond.**

APPENDIX V

EXPLORATORY HOLE LOGS

OMNIA ENVIRONMENTAL CONSULTING 10 Manor Court 2 Barnes Wallis Road Segensworth Fareham PO15 5TH	**Borehole Log**		Borehole No. **BH101** Sheet 1 of 1
Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type CP
Location: Amesbury		Level:	Scale 1:50
Client: Bloor Homes Southern		Dates: 20/08/2018 - 21/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.25			TOPSOIL Grass cover over friable brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular fine to coarse of flint.
		1.00 1.00	D	N=36 (3,4/10,8,9,9)				CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00 2.00	D	N=35 (2,3/6,8,12,9)				
		3.00 3.00	D	N=32 (3,8/10,7,8,7)				
		4.00 4.00	D	N=35 (4,5/10,10,8,7)				
		5.00 5.00 - 5.50	B	N=21 (4,5/5,6,5,5)				
		6.50 6.50	D	N=42 (10,12/12,11,9,10)				
		8.00 8.00	D	N=33 (12,12/10,9,6,8)				
		9.50 9.50	D	N=50 (5,8/50 for 230mm)				*Between 9.50m bgl to 10.00m bgl chiselling for 1 hour, hole terminated due to obstruction.*
					10.00			End of borehole at 10.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 10.0m bgl due to obstruction after chiselling for 1 hour

AGS

OMNIA ENVIRONMENTAL CONSULTING
10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Borehole Log

Borehole No.
BH102
Sheet 1 of 2

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type CP
Location: Amesbury		Level:	Scale 1:50
Client: Bloor Homes Southern		Dates: 21/08/2018 - 22/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.25			TOPSOIL Grass cover over friable brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular fine to coarse of flint.
		1.00 1.00	D	50 (20,17/50 for 200mm)				CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00 2.00	D	N=41 (5,6/8,11,12,10)				
		3.00 3.00	D	N=40 (5,9/10,11,11,8)				
		4.00 4.00	D	N=30 (3,5/6,7,8,9)				
		5.00 5.00	D	50 (5,10/50 for 50mm)				
		5.00 - 5.50	B					
		6.50 6.50	D	N=32 (21,9/8,8,8,8)				
		8.00 8.00	D	50 (5,6/50 for 225mm)				
		9.50 9.50	D	N=46 (5,6/10,12,12,12)				*Between 9.50m bgl to 10.10m bgl chiselling for 1 hour, hole terminated due to obstruction.*
					10.00			

Continued on next sheet

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 10.10m bgl due to obstruction after chiselling for 1 hour

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2 Barnes Wallis Road
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PO15 5TH

Borehole Log

Borehole No.
BH102
Sheet 2 of 2

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type CP
Location: Amesbury		Level:	Scale 1:50
Client: Bloor Homes Southern		Dates: 21/08/2018 - 22/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
								End of borehole at 10.10 m

11
12
13
14
15
16
17
18
19
20

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 10.10m bgl due to obstruction after chiselling for 1 hour

AGS

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10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Borehole Log

Borehole No.
BH103
Sheet 1 of 2

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type CP
Location: Amesbury		Level:	Scale 1:50
Client: Bloor Homes Southern		Dates: 22/08/2018 - 22/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30			TOPSOIL Grass cover over friable brown slightly gravelly sandy CLAY. Sand is medium to coarse. Gravel is angular to subangular fine to coarse of flint.
		1.00 1.00	D	N=14 (3,3/3,3,4,4)				CLAY Soft to firm orangeish brown slightly gravelly very sandy CLAY. Gravel is angular to subrounded fine to coarse of flint. Sand is fine to medium.
		2.00		N=9 (3,2/3,2,2,2)				
		3.00 3.00	D	N=26 (4,7/8,7,4,7)	2.80			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		4.00 4.00	D	N=24 (3,4/6,5,5,8)				
		5.00 5.00	D	N=20 (4,4/6,4,4,6)				
		6.50 6.50	D	N=26 (4,5/6,7,6,7)				
		8.00 8.00	D	N=29 (5,5/7,7,7,8)				
		9.50 9.50	D	N=31 (5,6/6,6,7,12)				

Continued on next sheet

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 11.00m bgl due to obstruction after chiselling for 1 hour

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Borehole Log

Borehole No.
BH103
Sheet 2 of 2

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type CP
Location: Amesbury		Level:	Scale 1:50
Client: Bloor Homes Southern		Dates: 22/08/2018 - 22/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		11.00 11.00	D	N=50 (5,7/50 for 250mm)	11.00			End of borehole at 11.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 11.00m bgl due to obstruction after chiselling for 1 hour

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Trial Pit Log

Trialpit No
SA101
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: - Level:	Date 28/08/2018
Location: Amesbury		Dimensions (m): Depth 1.30 — 1.7 × 0.47	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			TOPSOIL Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
							CHALK Weak medium density white with frequent black specks CHALK. Fractures closely spaced, open and generally infilled with uncompact, light creamish brown, silt size communicated chalk. Sparse horizontal band of cobble sized flint at approximately 2.00-2.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
				1.30			End of pit at 1.30 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.30m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
SA102
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: - Level:	Date 28/08/2018
Location: Amesbury		Dimensions (m): Depth 1.60 — 1.8 × 0.5	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			TOPSOIL Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
				0.30			GRAVEL Pale brown angular to subrounded fine to coarse sandy GRAVEL of flint and occasional chalk. Sand is medium to coarse.
							CHALK Weak medium density white with frequent black specks CHALK. Fractures closely spaced, open and generally infilled with uncompact, light creamish brown, silt size communicated chalk. Sparse horizontal band of cobble sized flint at approximately 2.00-2.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
				1.60			End of pit at 1.60 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.60m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
SA103
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: - Level:	Date 29/08/2018
Location: Amesbury		Dimensions (m): Depth 1.63 (1.8 × 0.5)	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.30			TOPSOIL Grass cover over brown angular to subrounded fine to coarse occasionally clayey slightly sandy GRAVEL of flint and occasional chalk.
							CHALK Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00-2.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
				1.63			End of pit at 1.63 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.63m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
SA104
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: - Level:	Date 29/08/2018
Location: Amesbury		Dimensions (m): 1.95 × 0.5, Depth 2.00	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			MADE GROUND Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
							MADE GROUND Light brown angular to subangular fine to coarse sandy GRAVEL of flint chalk brick plastic asphalt cobble sized brick and concrete rare paving slab and rare wood.
				1.10			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00-2.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
				2.00			End of pit at 2.00 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.00m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP101
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16023.00 - 39994.00 Level:	Date 20/08/2018
Location: Amesbury		Dimensions (m): 2 × 0.5 Depth 2.60	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES					TOPSOIL Grass cover over friable brown slightly sandy gravelly CLAY. Sand is medium to coarse. Gravel is angular to subangular fine to coarse of flint.
	0.30 - 0.70	B		0.30			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00-2.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
	0.50 - 0.60	ES					
				2.60			End of pit at 2.60 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.60m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP102
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16036.00 - 39923.00 Level:	Date 20/08/2018
Location: Amesbury		Dimensions (m): 2 × 0.5 Depth 2.80	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			TOPSOIL Grass cover over brown angular to subrounded fine to coarse occasionally clayey slightly sandy GRAVEL of flint and occasional chalk.
	2.00 - 2.10	ES					Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00-2.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
				2.80			End of pit at 2.80 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.80m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP103
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15943.00 - 39952.00 Level:	Date 20/08/2018
Location: Amesbury		Dimensions (m): 1.9 × 0.5, Depth 2.90	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.10 - 0.20	ES					WORKED GROUND Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
	0.20 - 0.70	B		0.20			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
	0.30 - 0.40	ES					
	2.90	D		2.90			End of pit at 2.90 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.90m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP104
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15928.00 - 40002.00 Level:	Date 20/08/2018
Location: Amesbury		Dimensions (m): 2 × 0.5, Depth 2.70	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 - 0.30	ES		0.20			TOPSOIL Grass cover over light brown slightly clayey gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse of flint and chalk.
	0.50 - 1.00	B					Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00-2.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
	1.00 - 1.10	ES					
				2.70			End of pit at 2.70 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.70m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP105
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15874.00 - 40082.00 Level:	Date 20/08/2018
Location: Amesbury		Dimensions (m): 1.9 × 0.5, Depth 2.50	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.30 - 0.80	B		0.20			TOPSOIL Grass cover over brown slightly clayey gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse of flint and chalk.
							Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 1.70m bgl. (Grade C4) SEAFORD CHALK FORMATION
							At 1.00m bgl chalk is recovered as white with increased recovery of cobble sized chalk gravels.
	2.50	D		2.50			End of pit at 2.50 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.50m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP106
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15886.00 - 40171.00 Level:	Date 20/08/2018
Location: Amesbury		Dimensions (m): 1.95 × 0.5, Depth 2.40	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 - 0.30	ES		0.30			TOPSOIL Grass cover over dark brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
	0.40 - 0.50	ES					Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
	2.00	D					*At 2.00m bgl silt content increases.*
				2.40			End of pit at 2.40 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.40m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP107
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15887.00 - 40214.00 Level:	Date 21/08/2018
Location: Amesbury		Dimensions (m): 1.98 × 0.5, Depth 3.00	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.00 - 0.20	D					TOPSOIL Grass cover over dark brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
	0.20 - 0.80	B		0.20			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
				0.80			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.50-2.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
	1.00 - 1.50	B					
	3.00	D		3.00			End of pit at 3.00 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.0m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP108
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16027.00 - 40299.00 Level:	Date 21/08/2018
Location: Amesbury		Dimensions (m): 2.1 × 0.5 Depth 2.80	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							TOPSOIL Grass cover over dark brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
	0.45 - 1.00	B		0.45			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
	2.00	D					
				2.80			End of pit at 2.80 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.80m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP109
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15987.00 - 40179.00 Level:	Date 21/08/2018
Location: Amesbury		Dimensions (m): 1.9 × 0.5, Depth 2.00	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			TOPSOIL Grass cover over dark brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
	1.00	D					Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
				2.00			End of pit at 2.00 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.0m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP110
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15950.00 - 40103.00 Level:	Date 21/08/2018
Location: Amesbury		Dimensions (m): 1.98 × 0.5, Depth 1.80	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.15 - 0.70	B		0.15			TOPSOIL Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
							Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 1.50m bgl. (Grade C4) SEAFORD CHALK FORMATION
				1.80			End of pit at 1.80 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.80m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP111
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16029.00 - 40433.00 Level:	Date 23/08/2018
Location: Amesbury		Dimensions (m): 1.9 × 0.7, Depth 2.40	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.10			MADE GROUND Grass cover over light brown gravelly medium to coarse SAND. Gravel is angular to subangular fine to coarse of flint and chalk. Frequent rootlets present.
							MADE GROUND Light brown angular to subangular medium to coarse sandy GRAVEL of flint chalk brick rare plastic cobble sized concrete rare polystyrene and asphalt.
	1.80 - 1.90	ES					
	2.00 - 2.10	ES		2.00			CLAY Firm to stiff orangeish brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subangular medium to coarse flint.
	2.20 - 2.30	ES		2.16			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 2.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
				2.40			End of pit at 2.40 m

1 2 3 4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.40m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP112
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16067.00 - 40342.00 Level:	Date 23/08/2018
Location: Amesbury		Dimensions (m): 1.8 × 0.8, Depth 1.60	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
	0.20 - 0.30	ES					TOPSOIL Grass cover over brown angular to subrounded fine to coarse occasionally clayey slightly sandy GRAVEL of flint and occasional chalk. *At 0.20m bgl cobble sized flint present.*
	0.60 - 0.70	ES		0.60			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 1.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
				1.60			End of pit at 1.60 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.60m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP113
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16050.00 - 40356.00 Level:	Date 23/08/2018
Location: Amesbury		Dimensions (m): 1.8 × 0.47, Depth 1.40	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.18			MADE GROUND Grass cover over light brown angular to subrounded medium to coarse sandy GRAVEL of flint and chalk with occasional rootlets. Sand is fine to medium.
				0.74			MADE GROUND Brown to yellowish brown angular to subangular medium to cobble sized flint brick concrete and rare plastic. *Between 0.3-0.4m bgl cobble sized brick and concrete present.* *At 0.50m bgl chalk gravels increases.*
				1.40			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 1.00m bgl. (Grade C4) SEAFORD CHALK FORMATION End of pit at 1.40 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.40m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP114
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: - Level:	Date 23/08/2018
Location: Amesbury		Dimensions (m): Depth 1.20 — 1.75 × 0.5	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
							MADE GROUND Grass cover over brown angular to subrounded fine to coarse sandy GRAVEL of flint chalk and concrete. Sand is fine to medium. Occasional cobble sized flint and concrete.
				0.60			Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 0.80m bgl. (Grade C4) SEAFORD CHALK FORMATION
				1.20			End of pit at 1.20 m

1
2
3
4

Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.20m bgl.

Stability: Stable

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Trial Pit Log

Trialpit No
TP115
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: - Level:	Date 23/08/2018
Location: Amesbury		Dimensions (m): Depth 2.10 — 1.7 × 0.45	Scale 1:20
Client: Bloor Homes Southern			Logged GL

Water Strike	Samples and In Situ Testing: Depth	Type	Results	Depth (m)	Level (m)	Legend	Stratum Description
				0.20			TOPSOIL Grass cover over brown angular to subrounded fine to coarse occasionally clayey slightly sandy GRAVEL of flint and occasional chalk.
							Weak medium density white with frequent black specks CHALK. Fractures closely spaced (20-60mm), open (>3mm) and generally infilled with uncompact, light creamish brown, silt size communited chalk. Sparse horizontal band of cobble sized flint at approximately 1.00m bgl. (Grade C4) SEAFORD CHALK FORMATION
				2.10			End of pit at 2.10 m

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Remarks: Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.10m bgl.

Stability: Stable

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Borehole Log

Borehole No.
WS101
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16046.00 - 40054.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 13/08/2018 - 13/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.15	ES		0.15			TOPSOIL Grass cover over light brown fine to gravelly fine to medium SAND. Gravel is angular to subangular fine to coarse of flint and chalk. Occasional rootlets.
		0.30 - 0.40	ES					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00 1.00 - 1.50	D	N=30 (3,5/7,8,8,7)	1.00			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00		N=22 (4,6/5,6,5,6)				
		3.00		N=54 (9,11/13,13,12,16)	3.00			End of borehole at 3.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS102
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15986.00 - 40138.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 13/08/2018 - 13/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.30	ES		0.20			TOPSOIL Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
		0.50 - 1.00	D					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		0.70 - 0.80	ES					
		1.00		N=33 (5,6/7,9,8,9)	1.00			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		1.50 - 2.00	D					
		2.00		N=27 (8,5/7,6,7,7)				
		3.00 3.00 - 3.50	D	N=32 (6,8/8,8,7,9)				
		3.80		55 (18,21/55 for 225mm)	3.80			End of borehole at 3.80 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.80m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS103
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15898.00 - 40127.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 13/08/2018 - 13/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.30	ES		0.30			TOPSOIL Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
		0.40 - 0.50	ES		0.50			CLAY Friable orangeish brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint and chalk.
		1.00		N=20 (2,4/5,5,4,6)				CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.10 - 1.20	ES		1.10			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		1.60		N=42 (8,7/8,11,11,12)				
		2.00 - 2.50	D					
		2.60		N=29 (10,9/8,7,7,7)				
		3.60		52 (5,4/52 for 225mm)	3.60			End of borehole at 3.60 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.60m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS104
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15848.00 - 40160.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 13/08/2018 - 13/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.40	ES		0.40			TOPSOIL Grass cover over brown fine to medium gravelly SAND. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
		0.50 - 1.00	D					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		0.60 - 0.70	ES					
		1.00		N=23 (4,4/5,5,6,7)	1.20			
		1.50 - 2.00	D					CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00		N=40 (5,12/13,9,9,9)				
		3.00		N=31 (6,6/8,8,7,8)				
		3.00 - 3.10	ES					
		3.50		N=54 (12,11/15,13,12,14)	3.50			End of borehole at 3.50 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.50m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS105
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15837.00 - 40083.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 13/08/2018 - 13/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.20	ES					TOPSOIL Grass cover over brown slightly silty gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse of flint and chalk.
		0.40 - 0.50	ES		0.30			CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00		N=32 (3,6/7,8,9,8)	1.00			
		1.00 - 1.10	ES					CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		1.50 - 2.00	D					
		2.00		N=42 (5,6/6,6,18,12)				
		3.00		44 (5,6/44 for 225mm)	3.00			End of borehole at 3.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS106
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15953.00 - 40052.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 14/08/2018 - 14/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.05			TOPSOIL Grass cover over light brown gravelly fine to medium SAND. Gravel is angular to subrounded fine to coarse of flint and chalk.
		0.20 - 0.30	ES		0.30			CLAY Friable brown slightly sandy gravelly CLAY. Sand is fine to medium gained. Gravel is angular to subrounded fine to coarse of flint.
		0.40 - 0.50	ES					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00 1.00 - 1.50	D	N=26 (3,5/5,7,8,6)				
		2.00		N=53 (6,9/10,14,15,14)	2.00			End of borehole at 2.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS107
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15882.00 - 40050.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 14/08/2018 - 14/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.20	ES		0.20			TOPSOIL Grass cover over friable dark brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
		1.00		N=32 (4,6/8,8,8,8)				CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.10 - 1.20	ES		1.10			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00		N=54 (6,4/7,12,18,17)				
		2.50 - 2.60	ES					
		2.50 - 3.00	D					
					3.00			End of borehole at 3.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS108
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15866.00 - 39979.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 14/08/2018 - 14/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.20	ES		0.10			TOPSOIL Grass cover over friable dark brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
		0.50 - 1.00	D					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00		N=50 (6,9/11,13,14,12)	1.00			End of borehole at 1.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS109
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15902.00 - 3998.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 14/08/2018 - 14/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.40	ES		0.40			TOPSOIL Grass cover over friable dark brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded fine to coarse flint with occasional rootlets.
		0.70 - 0.80	ES					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00 1.00 - 1.50	D	N=29 (6,6/6,7,7,9)				
		1.60		N=40 (11,12/11,10,9,10)				
		2.60		N=57 (8,12/15,12,13,17)	2.60			End of borehole at 2.60 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.60m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS110
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15953.00 - 40004.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 14/08/2018 - 14/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL Grass cover over friable dark brown slightly sandy gravelly CLAY. Sand is fine to medium. Gravel is angular to subrounded fine to coarse of flint with occasional rootlets.
		0.50 - 0.60	ES					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00 1.00 - 1.10	ES	N=28 (3,5/6,6,7,9)				
		1.50 - 1.70	D					
		1.70		N=53 (11,13/15,15,12,11)	1.70			End of borehole at 1.70 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.70m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS111
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16009.00 - 40014.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 15/08/2018 - 15/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.40	ES					TOPSOIL Grass cover over friable brown gravelly CLAY. Gravel is angular to subangular fine to coarse of flint.
		0.40 - 0.50	ES		0.40			CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00		N=33 (3,6/6,8,9,10)				
		1.40 - 1.50	ES		1.40			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00	D					
		2.00		N=43 (6,10/11,11,12,9)				
		2.60	D		2.60			End of borehole at 2.60 m
		2.60		N=50 (7,10/10,10,14,16)				

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.60m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS112
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 16060.00 - 39922.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 15/08/2018 - 15/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.20	ES		0.20			TOPSOIL Grass cover over friable brown slightly silty gravelly CLAY. Gravel is angular to subangular fine to coarse of flint.
		1.00		N=43 (3,8/9,12,13,9)				CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.30 - 1.50	D		1.30			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00		N=32 (10,12/9,9,8,6)				
		3.00 3.00	D	N=56 (9,10/15,16,14,11)	3.00			End of borehole at 3.00 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS113
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15997.00 - 39922.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 15/08/2018 - 15/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.30	ES		0.20			TOPSOIL Grass cover over friable brown gravelly CLAY. Gravel is angular to subangular fine to coarse of flint.
		0.50 - 1.00	D					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00		50 (7,50/50 for 75mm)	1.00			End of borehole at 1.00 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS114
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15940.00 - 39941.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 15/08/2018 - 15/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.30	ES					TOPSOIL Grass cover over friable brown gravelly CLAY. Gravel is angular to subangular fine to coarse of flint.
					0.40			
		0.70 - 0.80	ES					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00		N=29 (4,5/6,7,8,8)				
		1.60		38 (12,17/38 for 150mm)	1.60			End of borehole at 1.60 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.60m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS115
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15952.00 - 39952.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 15/08/2018 - 15/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30 - 0.40	ES		0.30			TOPSOIL Grass cover over friable brown gravelly CLAY. Gravel is angular to subangular fine to coarse of flint.
		1.00		N=30 (4,7/8,8,7,7)				CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.70		N=51 (12,12/11,10,11,19)	1.70			End of borehole at 1.70 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 1.70m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS116
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: 15906.00 - 39954.00	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 15/08/2018 - 15/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			TOPSOIL Grass cover over friable brown gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint and chalk. Frequent rootlets.
		1.00		N=21 (5,6/5,6,5,5)				CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.70 - 2.00	D		1.10			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00		59 (11,15/59 for 225mm)	2.00			End of borehole at 2.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.00m bgl due to SPT refusal.

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Borehole Log

Borehole No.
WS117
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 16/08/2018 - 16/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.30	ES					TOPSOIL Grass cover over greyish brown gravelly fine to coarse SAND. Gavel is angular to subrounded fine to coarse of flint and chalk. Frequent rootlets up to 90mm long.
					0.50			CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00 1.00	D	N=29 (4,6/6,6,9,8)				
					1.50			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.00 2.00	D	N=39 (4,7/7,12,10,10)				
		3.00 3.00	D	N=56 (6,13/11,13,17,15)	3.10			End of borehole at 3.10 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 3.10m bgl due to SPT refusal.

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OMNIA ENVIRONMENTAL CONSULTING
10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS118
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 16/08/2018 - 16/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.40	ES					TOPSOIL Grass cover over greyish brown gravelly fine to coarse SAND. Gavel is angular to subrounded fine to cobble sized of flint and chalk. Frequent rootlets up to 90mm long.
		0.60 - 0.90	ES		0.50			CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00 1.00	D	N=40 (7,9/9,11,11,9)				
		1.60 1.60	D	N=25 (7,10/8,5,6,6)	1.60			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		2.50 2.50	D	50 (11,12/50 for 75mm)				
					2.80			End of borehole at 2.80 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.80m bgl due to SPT refusal.

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PO15 5TH

Borehole Log

Borehole No.
WS119
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 16/08/2018 - 16/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.40	ES					TOPSOIL Grass cover over greyish brown gravelly fine to coarse SAND. Gavel is angular to subrounded fine to cobble sized of flint and chalk. Frequent rootlets up to 90mm long.
					0.50			
		0.60 - 0.90	ES					CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		1.00 1.00	D	N=27 (3,5/6,7,6,8)				
					1.60			
		1.80 1.80	D	N=55 (9,11/13,13,14,15)				CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
					2.25			End of borehole at 2.25 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.25m bgl due to SPT refusal.

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PO15 5TH

Borehole Log

Borehole No.
WS120
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 16/08/2018 - 16/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.40	ES					TOPSOIL Grass cover over greyish brown gravelly fine to coarse SAND. Gavel is angular to subrounded fine to cobble sized of flint and chalk. Frequent rootlets up to 90mm long.
					0.50			
		1.00 1.00	D	N=31 (6,7/7,7,7,10)				CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
					1.60			
		2.00 2.00	D	N=50 (5,7/9,14,13,14)				CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
					2.45			End of borehole at 2.45 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 2.45m bgl due to SPT refusal.

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2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS121
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 16/08/2018 - 16/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.40	ES					TOPSOIL Grass cover over brown gravelly fine to coarse SAND. Gravel is angular to subrounded fine to coarse of flint and chalk. Frequent rootlets up to 90mm long.
					0.80			
		1.00 1.00	D	N=24 (4,6/6,6,6,6)				CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		2.00 2.00	D	N=18 (6,4/4,4,4,6)	2.00			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		3.00 3.00	D	N=18 (4,5/5,4,4,5)				
		3.90 3.90	D	N=31 (9,9/9,6,7,9)				
		4.70	D					
					5.00			End of borehole at 5.00 m

1 2 3 4 5

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 5.00m bgl due to SPT refusal.

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PO15 5TH

Borehole Log

Borehole No.
WS122
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 17/08/2018 - 17/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20 - 0.30	ES					MADE GROUND Grass cover over light brown angular to subrounded fine to coarse sandy GRAVEL of flint and chalk. Sand is medium to coarse grained. Occasional cobble sized flint and brick.
		0.60 - 0.70	ES		0.60 0.70			MADE GROUND Pale greyish brown gravelly fine to medium SAND. Gravel of angular to subrounded fine to coarse flint and chalk.
		1.00		N=18 (4,6/4,4,6,4)	1.00			MADE GROUND Grey angular to subangular fine to coarse sandy GRAVEL of flint and chalk. Sand is medium to coarse grained.
		1.00 - 1.10 1.15 - 1.25 1.15 - 1.65	ES ES D		1.15			MADE GROUND Black angular to subangular fine to coarse sandy GRAVEL of flint and asphalt. Sand is fine to medium grained.
		1.90		N=11 (2,3/2,2,5,2)				CLAY Stiff brown gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint and chalk.
		2.90		N=24 (8,7/7,6,6,5)	3.00			CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		3.50 - 4.00	D					
		3.90		N=16 (3,4/4,4,4,4)	3.90			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		4.50 - 5.00	D					
		4.90		50 (12,28/50 for 75mm)	4.90			End of borehole at 4.90 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 4.90m bgl due to SPT refusal.

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Fareham
PO15 5TH

Borehole Log

Borehole No.
WS123
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 17/08/2018 - 17/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30			MADE GROUND Grass cover over brown angular to subrounded fine to coarse sandy GRAVEL of flint and chalk. Sand is medium to coarse grained.
		0.40 - 0.50	ES		0.40			MADE GROUND Light grey angular to subrounded fine to coarse sandy GRAVEL of flint and chalk. Sand is medium to coarse.
		0.50 - 1.00	D					MADE GROUND Creamish white angular to subrounded sandy GRAVEL of chalk and flint. Sand is medium to coarse grained.
		0.70 - 0.80	ES					
		1.00		N=24 (4,6/7,5,6,6)				
		1.50 - 1.60	ES		1.50			MADE GROUND Firm to stiff brown slightly gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint chalk rare brick and asphalt.
		2.00		N=8 (2,2/2,2,2,2)				
		3.00		N=11 (2,2/2,3,3,3)				
		3.00 - 3.10	ES					
					3.50			CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		4.00	D					
		4.00		N=24 (3,6/7,6,5,6)				
		4.60		N=17 (5,4/4,4,5,4)				
					5.00			End of borehole at 5.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 5.00m bgl due to SPT refusal.

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Fareham
PO15 5TH

Borehole Log

Borehole No.
WS124
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 17/08/2018 - 17/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			TOPSOIL Grass cover over friable brown gravelly CLAY. Gravel is angular to subangular fine to coarse of flint.
					0.50			SAND Brown gravelly medium to coarse SAND. Gravel of angular to subrounded fine to coarse flint and chalk.
		1.00		N=30 (2,7/7,8,7,8)				CHALK Structureless CHALK composed of creamish white slightly gravelly SILT. Gravel is weak low density white with frequent black specks. Occasional angular flint. (Grade Dm) SEAFORD CHALK FORMATION
		1.50 - 2.00	D					
		1.80		N=29 (3,5/6,7,8,8)				
		2.80		N=20 (4,7/6,5,4,5)				
		3.00	D					
		3.70		N=30 (8,8/9,10,6,5)				
		4.70		N=33 (9,10/8,8,8,9)	4.70			End of borehole at 4.70 m

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Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 4.70m bgl due to SPT refusal.

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Segensworth
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS125
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 17/08/2018 - 17/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10 - 0.20	ES		0.10			TOPSOIL Grass cover over friable brown gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint. Frequent rootlets.	
		1.00		N=18 (5,5/4,5,4,5)				GRAVEL Light brownish grey angular to subrounded fine to coarse sandy GRAVEL of flint and chalk. Sand is medium to coarse grained.	1
					1.20			CLAY Stiff brown gravelly CLAY. Gravel of angular to suborder fine to coarse flint and chalk.	
		2.00 2.00	D	N=18 (2,4/3,5,4,6)	2.00			CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION	2
		3.00 3.00	D	N=22 (2,4/4,7,6,5)					3
		4.00		N=26 (4,4/6,6,5,9)					4
		5.00		N=24 (5,6/6,5,6,7)	5.00			End of borehole at 5.00 m	5

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 5.00m bgl due to SPT refusal.

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10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Borehole Log

Borehole No.
WS126
Sheet 1 of 1

Project Name: Amesbury 299	Project No. A11004	Co-ords: -	Hole Type WS
Location: Amesbury		Level:	Scale 1:25
Client: Bloor Homes Southern		Dates: 17/08/2018 - 17/08/2018	Logged By GL

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.05			MADE GROUND Grass cover over friable brown gravelly CLAY. Gravel is angular to subrounded fine to coarse of flint.
		0.30 - 0.40	ES					MADE GROUND Brown angular to subrounded fine to coarse sandy GRAVEL of flint and occasional chalk. Sand is fine to medium grained.
		1.00		N=16 (2,4/4,4,4,4)	1.00			MADE GROUND Stiff brown gravelly CLAY. Gravel is angular to subangular fine to coarse of flint chalk brick and asphalt. Occasional bands of angular to subrounded chalk gravel.
		1.80 - 1.90	ES					
		2.00		N=19 (4,6/5,5,4,5)	2.00			CHALK Structureless CHALK composed of slightly sandy GRAVEL and cobbles. Clasts are very weak low and medium density white with occasional black specks. Occasional angular flint. (Grade Dc) SEAFORD CHALK FORMATION
		2.00 - 2.50	D					
		3.00		N=18 (4,3/4,4,4,6)				
		4.00		N=16 (3,4/4,4,4,4)				
		5.00		N=28 (4,3/4,7,8,9)	5.00			End of borehole at 5.00 m

Remarks
Cleared by Cable Avoidance Tool. No groundwater encountered. Pit terminated at 5.00m bgl due to SPT refusal.

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APPENDIX VI

CHEMICAL ANALYSIS CERTIFICATES

Exova Jones Environmental

Registered Office: Exova Environmental UK Limited, 10 Lower Grosvenor Place, London, SW1W 0EN. Reg No. 11371415

Unit 3 Deeside Point
Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

Omnia
10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Attention :	Tim Mitchell
Date :	7th September, 2018
Your reference :	A11004
Our reference :	Test Report 18/13395 Batch 1
Location :	Amesbury 299
Date samples received :	23rd August, 2018
Status :	Final report
Issue :	1

Fifty nine samples were received for analysis on 23rd August, 2018 of which twenty six were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Phil Sommerton BSc
Project Manager

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	3-4	5-6	11-12	15-16	19-20	25-26	29-30	33-34	35-36	51-52	LOD/LOR	Units	Method No.
Sample ID	TP101	TP102	TP104	TP106	WS101	WS102	WS103	WS103	WS104	WS107			
Depth	0.50-0.60	2.00-2.10	0.20-0.30	0.20-0.30	0.10-0.15	0.20-0.30	0.20-0.30	1.10-1.20	0.30-0.40	0.10-0.20			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	20/08/2018	20/08/2018	20/08/2018	20/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	14/08/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018			
Arsenic #	<0.5	-	<0.5	9.0	8.4	3.2	-	-	7.1	8.3	<0.5	mg/kg	TM30/PM15
Barium #	9	-	9	95	82	38	-	-	74	92	<1	mg/kg	TM30/PM15
Beryllium	<0.5	-	<0.5	1.1	1.0	<0.5	-	-	0.8	1.2	<0.5	mg/kg	TM30/PM15
Cadmium #	0.4	-	0.3	0.7	0.8	0.6	-	-	0.7	0.5	<0.1	mg/kg	TM30/PM15
Chromium #	10.1	-	10.4	50.5	47.2	17.3	-	-	46.1	63.8	<0.5	mg/kg	TM30/PM15
Copper #	2	-	1	12	12	5	-	-	11	12	<1	mg/kg	TM30/PM15
Lead #	<5	-	<5	24	24	<5	-	-	19	20	<5	mg/kg	TM30/PM15
Mercury #	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	2.9	-	2.5	23.6	20.7	9.5	-	-	18.2	26.9	<0.7	mg/kg	TM30/PM15
Selenium #	<1	-	<1	<1	<1	<1	-	-	<1	<1	<1	mg/kg	TM30/PM15
Vanadium	2	-	3	40	35	16	-	-	30	44	<1	mg/kg	TM30/PM15
Water Soluble Boron #	<0.1	-	<0.1	2.1	2.3	0.9	-	-	2.2	1.5	<0.1	mg/kg	TM74/PM32
Zinc #	14	-	11	70	72	31	-	-	58	72	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	-	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	-	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	-	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	-	<0.03	<0.03	<0.03	<0.03	-	-	0.03	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	-	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	<0.03	-	<0.03	0.08	0.04	<0.03	-	-	0.11	0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	<0.03	-	<0.03	0.07	0.04	<0.03	-	-	0.10	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	-	<0.06	0.07	<0.06	<0.06	-	-	0.08	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #	<0.02	-	<0.02	0.06	0.03	<0.02	-	-	0.07	0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	<0.07	-	<0.07	0.09	<0.07	<0.07	-	-	0.13	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	<0.04	-	<0.04	0.06	<0.04	<0.04	-	-	0.07	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	<0.04	-	<0.04	<0.04	<0.04	<0.04	-	-	0.06	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	-	<0.04	<0.04	<0.04	<0.04	-	-	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	<0.04	-	<0.04	<0.04	<0.04	<0.04	-	-	0.06	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	-	<0.6	<0.6	<0.6	<0.6	-	-	0.7	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	<0.05	-	<0.05	0.06	<0.05	<0.05	-	-	0.09	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	<0.02	-	<0.02	0.03	<0.02	<0.02	-	-	0.04	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	84	-	84	82	98	93	-	-	101	82	<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

Please see attached notes for all abbreviations and acronyms

J E Sample No.	3-4	5-6	11-12	15-16	19-20	25-26	29-30	33-34	35-36	51-52	LOD/LOR	Units	Method No.
Sample ID	TP101	TP102	TP104	TP106	WS101	WS102	WS103	WS103	WS104	WS107			
Depth	0.50-0.60	2.00-2.10	0.20-0.30	0.20-0.30	0.10-0.15	0.20-0.30	0.20-0.30	1.10-1.20	0.30-0.40	0.10-0.20			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	20/08/2018	20/08/2018	20/08/2018	20/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	14/08/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018			
Pesticides													
Organochlorine Pesticides													
Aldrin	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Alpha-HCH (BHC)	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Beta-HCH (BHC)	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Chlorothalonil	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
cis-Chlordane	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Delta-HCH (BHC)	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Dieldrin	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Endosulphan I	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Endosulphan II	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Endosulphan sulphate	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Endrin	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Gamma-HCH (BHC)	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Heptachlor	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Heptachlor Epoxide	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Hexachlorobenzene	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Isodrin	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
o,p'-DDE	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
o,p'-DDT	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
o,p'-Methoxychlor	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
o,p'-TDE	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
p,p'-DDE	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
p,p'-DDT	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
p,p'-Methoxychlor	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
p,p'-TDE	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Pendimethalin	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Permethrin I	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Permethrin II	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Quintozene (PCNB)	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Tecnazene	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Telodrin	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
trans-Chlordane	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Triadimefon	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Triallate	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
Trifluralin	-	-	-	-	-	-	<10	-	-	-	<10	ug/kg	TM42/PM8
2,3,6 - TBA	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
2,4 - D	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
2,4 - DB	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
2,4,5 - T	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
4 - CPA	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Benazolin	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Bentazone	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	3-4	5-6	11-12	15-16	19-20	25-26	29-30	33-34	35-36	51-52	LOD/LOR	Units	Method No.
Sample ID	TP101	TP102	TP104	TP106	WS101	WS102	WS103	WS103	WS104	WS107			
Depth	0.50-0.60	2.00-2.10	0.20-0.30	0.20-0.30	0.10-0.15	0.20-0.30	0.20-0.30	1.10-1.20	0.30-0.40	0.10-0.20			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	20/08/2018	20/08/2018	20/08/2018	20/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	13/08/2018	14/08/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018			
Bromoxynil	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Clopyralid	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Dicamba	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Dichloroprop	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Diclofop	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Fenoprop	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Flamprop	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Flamprop – isopropyl	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Ioxynil	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
MCPA	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
MCPB	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Mecoprop	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Pentachlorophenol	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Picloram	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
Triclopyr	-	-	-	-	-	-	<0.1	-	-	-	<0.1	mg/kg	TM42/PM8
EPH >C8-C10 #	<5	-	<5	<5	<5	<5	-	-	<5	<5	<5	mg/kg	TM5/PM8
EPH >C10-C12 #	<10	-	<10	<10	<10	<10	-	-	<10	<10	<10	mg/kg	TM5/PM8
EPH >C12-C16 #	<10	-	<10	<10	<10	<10	-	-	<10	<10	<10	mg/kg	TM5/PM8
EPH >C16-C21 #	<10	-	<10	<10	<10	<10	-	-	<10	<10	<10	mg/kg	TM5/PM8
EPH >C21-C40	<10	-	<10	77	80	<10	-	-	113	24	<10	mg/kg	TM5/PM8
EPH >C8-C40	<30	-	<30	77	80	<30	-	-	113	<30	<30	mg/kg	TM5/PM8
GRO (>C4-C6)	<100	-	<100	<100	<100	<100	-	-	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C6-C8) #	<100	-	<100	<100	<100	<100	-	-	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C4-C8)	<100	-	<100	<100	<100	<100	-	-	<100	<100	<100	ug/kg	TM36/PM12
Total Phenols HPLC	<0.15	-	<0.15	<0.15	<0.15	<0.15	-	-	<0.15	<0.15	<0.15	mg/kg	TM26/PM21
Natural Moisture Content	17.7	22.8	20.1	11.0	11.0	13.5	13.0	23.4	11.7	9.6	<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	-	<0.3	<0.3	<0.3	<0.3	-	-	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0035	<0.0015	0.0024	<0.0015	<0.0015	<0.0015	-	<0.0015	<0.0015	<0.0015	<0.0015	g/l	TM38/PM20
Chromium III	10.1	-	10.4	50.5	47.2	17.3	-	-	46.1	63.8	<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
pH #	9.30	9.25	9.22	8.00	7.97	8.53	-	9.24	7.91	8.02	<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	55-56	57-58	59-60	67-68	75-76	79-80	85-86	87-88	89-90	91-92	LOD/LOR	Units	Method No.
Sample ID	WS107	WS108	WS109	WS111	WS113	WS114	WS122	WS122	WS122	WS123			
Depth	2.50-2.60	0.10-0.20	0.30-0.40	0.30-0.40	0.20-0.30	0.70-0.80	0.60-0.70	1.00-1.10	1.15-1.25	0.40-0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	14/08/2018	14/08/2018	14/08/2018	15/08/2018	15/08/2018	15/08/2018	17/08/2018	17/08/2018	17/08/2018	17/08/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018			
Arsenic #	-	2.2	8.7	9.7	0.5	-	5.7	3.8	5.3	4.5	<0.5	mg/kg	TM30/PM15
Barium #	-	26	89	89	11	-	124	118	67	80	<1	mg/kg	TM30/PM15
Beryllium	-	<0.5	1.0	1.1	<0.5	-	0.6	<0.5	0.8	0.6	<0.5	mg/kg	TM30/PM15
Cadmium #	-	0.3	0.6	0.7	0.4	-	0.7	0.6	0.7	0.8	<0.1	mg/kg	TM30/PM15
Chromium #	-	30.3	51.5	62.8	4.2	-	32.0	9.9	52.9	24.5	<0.5	mg/kg	TM30/PM15
Copper #	-	4	13	13	2	-	11	6	12	9	<1	mg/kg	TM30/PM15
Lead #	-	<5	22	26	<5	-	18	20	22	17	<5	mg/kg	TM30/PM15
Mercury #	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	mg/kg	TM30/PM15
Nickel #	-	7.6	21.1	25.0	2.5	-	13.5	5.7	17.8	12.0	<0.7	mg/kg	TM30/PM15
Selenium #	-	<1	1	<1	<1	-	<1	<1	<1	<1	<1	mg/kg	TM30/PM15
Vanadium	-	10	37	39	4	-	23	12	28	21	<1	mg/kg	TM30/PM15
Water Soluble Boron #	-	0.3	1.9	1.2	0.3	-	1.3	0.6	1.8	1.8	<0.1	mg/kg	TM74/PM32
Zinc #	-	19	61	71	11	-	69	33	65	57	<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.40$_{AA}$	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Acenaphthylene	-	<0.03	<0.03	<0.03	<0.03	-	0.04	<0.30$_{AA}$	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Acenaphthene #	-	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.50$_{AA}$	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Fluorene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.40$_{AA}$	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Phenanthrene #	-	<0.03	0.03	<0.03	<0.03	-	0.22	<0.30$_{AA}$	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Anthracene #	-	<0.04	<0.04	<0.04	<0.04	-	0.10	<0.40$_{AA}$	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Fluoranthene #	-	<0.03	0.12	0.06	<0.03	-	0.41	0.42$_{AA}$	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Pyrene #	-	<0.03	0.10	0.05	<0.03	-	0.38	0.41$_{AA}$	<0.03	<0.03	<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	-	<0.06	0.10	0.06	<0.06	-	0.26	<0.60$_{AA}$	<0.06	<0.06	<0.06	mg/kg	TM4/PM8
Chrysene #	-	<0.02	0.08	0.04	<0.02	-	0.20	<0.20$_{AA}$	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	-	<0.07	0.14	0.08	<0.07	-	0.36	<0.70$_{AA}$	<0.07	<0.07	<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	-	<0.04	0.09	0.05	<0.04	-	0.20	<0.40$_{AA}$	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	-	<0.04	0.05	<0.04	<0.04	-	0.14	<0.40$_{AA}$	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	-	<0.04	<0.04	<0.04	<0.04	-	<0.04	<0.40$_{AA}$	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	-	<0.04	0.05	<0.04	<0.04	-	0.14	<0.40$_{AA}$	<0.04	<0.04	<0.04	mg/kg	TM4/PM8
PAH 16 Total	-	<0.6	0.8	<0.6	<0.6	-	2.5	<6.0$_{AA}$	<0.6	<0.6	<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	-	<0.05	0.10	0.06	<0.05	-	0.26	<0.50$_{AA}$	<0.05	<0.05	<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	-	<0.02	0.04	0.02	<0.02	-	0.10	<0.20$_{AA}$	<0.02	<0.02	<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	-	89	88	86	89	-	96	96$_{AA}$	97	92	<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	55-56	57-58	59-60	67-68	75-76	79-80	85-86	87-88	89-90	91-92	LOD/LOR	Units	Method No.
Sample ID	WS107	WS108	WS109	WS111	WS113	WS114	WS122	WS122	WS122	WS123			
Depth	2.50-2.60	0.10-0.20	0.30-0.40	0.30-0.40	0.20-0.30	0.70-0.80	0.60-0.70	1.00-1.10	1.15-1.25	0.40-0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	14/08/2018	14/08/2018	14/08/2018	15/08/2018	15/08/2018	15/08/2018	17/08/2018	17/08/2018	17/08/2018	17/08/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018			
Pesticides													
Organochlorine Pesticides													
Aldrin	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Alpha-HCH (BHC)	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Beta-HCH (BHC)	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Chlorothalonil	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
cis-Chlordane	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Delta-HCH (BHC)	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Dieldrin	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Endosulphan I	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Endosulphan II	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Endosulphan sulphate	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Endrin	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Gamma-HCH (BHC)	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Heptachlor	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Heptachlor Epoxide	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Hexachlorobenzene	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Isodrin	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
o,p'-DDE	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
o,p'-DDT	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
o,p'-Methoxychlor	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
o,p'-TDE	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
p,p'-DDE	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
p,p'-DDT	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
p,p'-Methoxychlor	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
p,p'-TDE	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Pendimethalin	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Permethrin I	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Permethrin II	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Quintozene (PCNB)	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Tecnazene	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Telodrin	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
trans-Chlordane	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Triadimefon	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Triallate	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
Trifluralin	-	-	-	-	-	-	-	-	-	-	<10	ug/kg	TM42/PM8
2,3,6 - TBA	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
2,4 - D	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
2,4 - DB	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
2,4,5 - T	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
4 - CPA	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Benazolin	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Bentazone	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	55-56	57-58	59-60	67-68	75-76	79-80	85-86	87-88	89-90	91-92	LOD/LOR	Units	Method No.
Sample ID	WS107	WS108	WS109	WS111	WS113	WS114	WS122	WS122	WS122	WS123			
Depth	2.50-2.60	0.10-0.20	0.30-0.40	0.30-0.40	0.20-0.30	0.70-0.80	0.60-0.70	1.00-1.10	1.15-1.25	0.40-0.50			
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J	V J	V J	V J	V J			
Sample Date	14/08/2018	14/08/2018	14/08/2018	15/08/2018	15/08/2018	15/08/2018	17/08/2018	17/08/2018	17/08/2018	17/08/2018			
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil			
Batch Number	1	1	1	1	1	1	1	1	1	1			
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018			
Bromoxynil	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Clopyralid	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Dicamba	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Dichloroprop	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Diclofop	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Fenoprop	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Flamprop	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Flamprop – isopropyl	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Ioxynil	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
MCPA	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
MCPB	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Mecoprop	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Pentachlorophenol	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Picloram	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
Triclopyr	-	-	-	-	-	-	-	-	-	-	<0.1	mg/kg	TM42/PM8
EPH >C8-C10 #	-	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	mg/kg	TM5/PM8
EPH >C10-C12 #	-	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	mg/kg	TM5/PM8
EPH >C12-C16 #	-	<10	<10	<10	<10	-	<10	35	<10	<10	<10	mg/kg	TM5/PM8
EPH >C16-C21 #	-	<10	<10	<10	<10	-	<10	239	<10	<10	<10	mg/kg	TM5/PM8
EPH >C21-C40	-	<10	88	77	<10	-	146	859	20	103	<10	mg/kg	TM5/PM8
EPH >C8-C40	-	<30	88	77	<30	-	146	1133	<30	103	<30	mg/kg	TM5/PM8
GRO (>C4-C6)	-	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C6-C8) #	-	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	ug/kg	TM36/PM12
GRO (>C4-C8)	-	<100	<100	<100	<100	-	<100	<100	<100	<100	<100	ug/kg	TM36/PM12
Total Phenols HPLC	-	<0.15	<0.15	<0.15	<0.15	-	<0.15	<0.15	<0.15	<0.15	<0.15	mg/kg	TM26/PM21
Natural Moisture Content	20.6	9.3	7.2	7.4	8.9	18.7	7.6	3.1	19.6	14.9	<0.1	%	PM4/PM0
Hexavalent Chromium #	-	<0.3	<0.3	<0.3	<0.3	-	<0.3	<0.3	<0.3	<0.3	<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	<0.0015	<0.0015	<0.0015	<0.0015	0.0018	<0.0015	0.0245	0.0316	0.0190	<0.0015	<0.0015	g/l	TM38/PM20
Chromium III	-	30.3	51.5	62.8	4.2	-	32.0	9.9	52.9	24.5	<0.5	mg/kg	NONE/NONE
Total Cyanide #	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	mg/kg	TM89/PM45
pH #	9.31	8.72	7.76	7.24	8.81	9.22	8.06	8.22	8.23	8.24	<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	99-100	101-102	103-104	107-108	111-112	117-118					LOD/LOR	Units	Method No.
Sample ID	WS125	WS126	WS126	WS118	WS119	WS121							
Depth	0.10-0.20	0.30-0.40	1.80-1.90	0.10-0.40	0.10-0.40	0.10-0.40							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	17/08/2018	17/08/2018	17/08/2018	16/08/2018	16/08/2018	16/08/2018							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018							
Arsenic #	18.4	6.3	3.8	6.3	-	8.4					<0.5	mg/kg	TM30/PM15
Barium #	93	80	96	78	-	92					<1	mg/kg	TM30/PM15
Beryllium	1.0	0.8	<0.5	0.7	-	1.1					<0.5	mg/kg	TM30/PM15
Cadmium #	2.2	0.9	0.6	0.7	-	0.7					<0.1	mg/kg	TM30/PM15
Chromium #	30.7	35.0	25.0	47.1	-	51.9					<0.5	mg/kg	TM30/PM15
Copper #	9	12	6	11	-	13					<1	mg/kg	TM30/PM15
Lead #	22	21	11	16	-	25					<5	mg/kg	TM30/PM15
Mercury #	<0.1	<0.1	<0.1	<0.1	-	<0.1					<0.1	mg/kg	TM30/PM15
Nickel #	15.4	17.1	9.4	16.5	-	24.0					<0.7	mg/kg	TM30/PM15
Selenium #	<1	1	<1	<1	-	<1					<1	mg/kg	TM30/PM15
Vanadium	30	31	16	26	-	40					<1	mg/kg	TM30/PM15
Water Soluble Boron #	1.6	1.7	1.6	2.2	-	2.3					<0.1	mg/kg	TM74/PM32
Zinc #	155	71	45	56	-	75					<5	mg/kg	TM30/PM15
PAH MS													
Naphthalene #	<0.04	<0.04	<0.04	<0.04	-	<0.04					<0.04	mg/kg	TM4/PM8
Acenaphthylene	<0.03	<0.03	<0.03	<0.03	-	<0.03					<0.03	mg/kg	TM4/PM8
Acenaphthene #	<0.05	<0.05	<0.05	<0.05	-	<0.05					<0.05	mg/kg	TM4/PM8
Fluorene #	<0.04	<0.04	<0.04	<0.04	-	<0.04					<0.04	mg/kg	TM4/PM8
Phenanthrene #	<0.03	<0.03	<0.03	<0.03	-	<0.03					<0.03	mg/kg	TM4/PM8
Anthracene #	<0.04	<0.04	0.05	<0.04	-	<0.04					<0.04	mg/kg	TM4/PM8
Fluoranthene #	0.08	<0.03	0.08	0.05	-	0.07					<0.03	mg/kg	TM4/PM8
Pyrene #	0.07	<0.03	0.08	0.05	-	0.06					<0.03	mg/kg	TM4/PM8
Benzo(a)anthracene #	<0.06	<0.06	0.08	<0.06	-	<0.06					<0.06	mg/kg	TM4/PM8
Chrysene #	0.06	<0.02	0.13	0.03	-	0.04					<0.02	mg/kg	TM4/PM8
Benzo(bk)fluoranthene #	0.14	<0.07	0.31	<0.07	-	0.08					<0.07	mg/kg	TM4/PM8
Benzo(a)pyrene #	0.09	<0.04	0.16	<0.04	-	0.05					<0.04	mg/kg	TM4/PM8
Indeno(123cd)pyrene #	0.06	<0.04	0.13	<0.04	-	<0.04					<0.04	mg/kg	TM4/PM8
Dibenzo(ah)anthracene #	<0.04	<0.04	<0.04	<0.04	-	<0.04					<0.04	mg/kg	TM4/PM8
Benzo(ghi)perylene #	0.06	<0.04	0.12	<0.04	-	<0.04					<0.04	mg/kg	TM4/PM8
PAH 16 Total	<0.6	<0.6	1.1	<0.6	-	<0.6					<0.6	mg/kg	TM4/PM8
Benzo(b)fluoranthene	0.10	<0.05	0.22	<0.05	-	0.06					<0.05	mg/kg	TM4/PM8
Benzo(k)fluoranthene	0.04	<0.02	0.09	<0.02	-	0.02					<0.02	mg/kg	TM4/PM8
PAH Surrogate % Recovery	93	89	94	89	-	84					<0	%	TM4/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	99-100	101-102	103-104	107-108	111-112	117-118					LOD/LOR	Units	Method No.
Sample ID	WS125	WS126	WS126	WS118	WS119	WS121							
Depth	0.10-0.20	0.30-0.40	1.80-1.90	0.10-0.40	0.10-0.40	0.10-0.40							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	17/08/2018	17/08/2018	17/08/2018	16/08/2018	16/08/2018	16/08/2018							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018							
Pesticides													
Organochlorine Pesticides													
Aldrin	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Alpha-HCH (BHC)	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Beta-HCH (BHC)	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Chlorothalonil	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
cis-Chlordane	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Delta-HCH (BHC)	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Dieldrin	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Endosulphan I	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Endosulphan II	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Endosulphan sulphate	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Endrin	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Gamma-HCH (BHC)	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Heptachlor	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Heptachlor Epoxide	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Hexachlorobenzene	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Isodrin	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
o,p'-DDE	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
o,p'-DDT	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
o,p'-Methoxychlor	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
o,p'-TDE	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
p,p'-DDE	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
p,p'-DDT	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
p,p'-Methoxychlor	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
p,p'-TDE	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Pendimethalin	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Permethrin I	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Permethrin II	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Quintozene (PCNB)	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Tecnazene	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Telodrin	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
trans-Chlordane	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Triadimefon	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Triallate	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
Trifluralin	-	-	-	-	<10	-					<10	ug/kg	TM42/PM8
2,3,6 - TBA	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
2,4 - D	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
2,4 - DB	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
2,4,5 - T	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
4 - CPA	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Benazolin	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Bentazone	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	99-100	101-102	103-104	107-108	111-112	117-118					LOD/LOR	Units	Method No.
Sample ID	WS125	WS126	WS126	WS118	WS119	WS121							
Depth	0.10-0.20	0.30-0.40	1.80-1.90	0.10-0.40	0.10-0.40	0.10-0.40							
COC No / misc													
Containers	V J	V J	V J	V J	V J	V J							
Sample Date	17/08/2018	17/08/2018	17/08/2018	16/08/2018	16/08/2018	16/08/2018							
Sample Type	Soil	Soil	Soil	Soil	Soil	Soil							
Batch Number	1	1	1	1	1	1							
Date of Receipt	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018	23/08/2018							
Bromoxynil	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Clopyralid	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Dicamba	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Dichloroprop	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Diclofop	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Fenoprop	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Flamprop	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Flamprop – isopropyl	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Ioxynil	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
MCPA	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
MCPB	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Mecoprop	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Pentachlorophenol	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Picloram	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
Triclopyr	-	-	-	-	<0.1	-					<0.1	mg/kg	TM42/PM8
EPH >C8-C10 #	<5	<5	<5	<5	-	<5					<5	mg/kg	TM5/PM8
EPH >C10-C12 #	<10	<10	<10	<10	-	<10					<10	mg/kg	TM5/PM8
EPH >C12-C16 #	<10	<10	<10	<10	-	<10					<10	mg/kg	TM5/PM8
EPH >C16-C21 #	<10	<10	<10	<10	-	<10					<10	mg/kg	TM5/PM8
EPH >C21-C40	127	99	237	121	-	104					<10	mg/kg	TM5/PM8
EPH >C8-C40	127	99	237	121	-	104					<30	mg/kg	TM5/PM8
GRO (>C4-C6)	<100	<100	<100	<100	-	<100					<100	ug/kg	TM36/PM12
GRO (>C6-C8) #	<100	<100	<100	<100	-	<100					<100	ug/kg	TM36/PM12
GRO (>C4-C8)	<100	<100	<100	<100	-	<100					<100	ug/kg	TM36/PM12
Total Phenols HPLC	<0.15	0.15	<0.15	<0.15	-	<0.15					<0.15	mg/kg	TM26/PM21
Natural Moisture Content	12.7	12.4	17.5	13.9	15.1	20.8					<0.1	%	PM4/PM0
Hexavalent Chromium #	<0.3	<0.3	<0.3	<0.3	-	<0.3					<0.3	mg/kg	TM38/PM20
Sulphate as SO4 (2:1 Ext) #	0.0379	<0.0015	0.0859	<0.0015	-	0.0697					<0.0015	g/l	TM38/PM20
Chromium III	30.7	35.0	25.0	47.1	-	51.9					<0.5	mg/kg	NONE/NONE
Total Cyanide #	<0.5	<0.5	<0.5	<0.5	-	<0.5					<0.5	mg/kg	TM89/PM45
pH #	7.94	8.04	8.07	8.09	-	7.76					<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell

Note:

Asbestos Screen analysis is carried out in accordance with our documented in-house methods PM042 and TM065 and HSG 248 by Stereo and Polarised Light Microscopy using Dispersion Staining Techniques and is covered by our UKAS accreditation. Detailed Gravimetric Quantification and PCOM Fibre Analysis is carried out in accordance with our documented in-house methods PM042 and TM131 and HSG 248 using Stereo and Polarised Light Microscopy and Phase Contrast Optical Microscopy (PCOM). Samples are retained for not less than 6 months from the date of analysis unless specifically requested.

Opinions, including ACM type and Asbestos level less than 0.1%, lie outside the scope of our UKAS accreditation.

Where the sample is not taken by a Jones Environmental Laboratory consultant, Jones Environmental Laboratory cannot be responsible for inaccurate or unrepresentative sampling.

Signed on behalf of Jones Environmental Laboratory:

Ryan Butterworth
Asbestos Team Leader

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
18/13395	1	TP101	0.50-0.60	4	04/09/2018	**General Description (Bulk Analysis)**	Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	TP104	0.20-0.30	12	04/09/2018	**General Description (Bulk Analysis)**	Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	TP106	0.20-0.30	16	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS101	0.10-0.15	20	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stone/Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS102	0.20-0.30	26	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS104	0.30-0.40	36	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS107	0.10-0.20	52	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
18/13395	1	WS107	0.10-0.20	52	04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS108	0.10-0.20	58	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stone/Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS109	0.30-0.40	60	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stone/Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS111	0.30-0.40	68	04/09/2018	**General Description (Bulk Analysis)**	soil-stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS113	0.20-0.30	76	04/09/2018	**General Description (Bulk Analysis)**	Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS122	0.60-0.70	86	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stone/Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS122	1.00-1.10	88	04/09/2018	**General Description (Bulk Analysis)**	soil-stones-chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS122	1.15-1.25	90	04/09/2018	**General Description (Bulk Analysis)**	soil-stones-chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS123	0.40-0.50	92	04/09/2018	**General Description (Bulk Analysis)**	soil-stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS125	0.10-0.20	100	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stone/Chalk
					04/09/2018	**Asbestos Fibres**	NAD

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: Tim Mitchell

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Date Of Analysis	Analysis	Result
18/13395	1	WS125	0.10-0.20	100	04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS126	0.30-0.40	102	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS126	1.80-1.90	104	04/09/2018	**General Description (Bulk Analysis)**	soil-stones-chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS118	0.10-0.40	108	04/09/2018	**General Description (Bulk Analysis)**	Soil/Stone/Chalk
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD
18/13395	1	WS121	0.10-0.40	118	04/09/2018	**General Description (Bulk Analysis)**	soil/stones
					04/09/2018	**Asbestos Fibres**	NAD
					04/09/2018	**Asbestos ACM**	NAD
					04/09/2018	**Asbestos Type**	NAD
					04/09/2018	**Asbestos Level Screen**	NAD

Client Name: Omnia

Matrix : Solid

Reference: A11004

Location: Amesbury 299

Contact: Tim Mitchell

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
18/13395	1	TP101	0.50-0.60	3-4	GRO	Sample holding time exceeded
18/13395	1	TP104	0.20-0.30	11-12	GRO	Sample holding time exceeded
18/13395	1	TP106	0.20-0.30	15-16	GRO	Sample holding time exceeded
18/13395	1	WS101	0.10-0.15	19-20	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS102	0.20-0.30	25-26	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS104	0.30-0.40	35-36	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS107	0.10-0.20	51-52	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS108	0.10-0.20	57-58	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS109	0.30-0.40	59-60	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS111	0.30-0.40	67-68	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS113	0.20-0.30	75-76	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS122	0.60-0.70	85-86	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS122	1.00-1.10	87-88	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS122	1.15-1.25	89-90	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS123	0.40-0.50	91-92	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS125	0.10-0.20	99-100	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS126	0.30-0.40	101-102	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS126	1.80-1.90	103-104	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS118	0.10-0.40	107-108	Cyanide, EPH, GRO, PAH	Sample holding time exceeded
18/13395	1	WS121	0.10-0.40	117-118	Cyanide, EPH, GRO, PAH	Sample holding time exceeded

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

Please include all sections of this report if it is reproduced

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 18/13395

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to an Exova Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range
AA	x10 Dilution

JE Job No: 18/13395

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM4	Modified USEPA 8270 method for the solvent extraction and determination of 16 PAHs by GC-MS.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM5	Modified USEPA 8015B method for the determination of solvent Extractable Petroleum Hydrocarbons (EPH) with carbon banding within the range C8-C40 GC-FID.	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.	Yes		AR	Yes
TM26	Determination of phenols by Reversed Phased High Performance Liquid Chromatography and Electro-Chemical Detection.	PM21	As received solid or water samples are extracted in Methanol: Sodium Hydroxide (0.1M NaOH) (60:40) by orbital shaker.			AR	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.			AD	Yes
TM30	Determination of Trace Metal elements by ICP-OES (Inductively Coupled Plasma - Optical Emission Spectrometry). Modified US EPA Method 200.7, 6010B and BS EN ISO 11885 2009	PM15	Acid digestion of dried and ground solid samples using Aqua Regia refluxed at 112.5 °C. Samples containing asbestos are not dried and ground.	Yes		AD	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.			AR	Yes
TM36	Modified US EPA method 8015B. Determination of Gasoline Range Organics (GRO) in the carbon chain range of C4-12 by headspace GC-FID.	PM12	Modified US EPA method 5021. Preparation of solid and liquid samples for GC headspace analysis.	Yes		AR	Yes

JE Job No: 18/13395

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+), 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+), 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AR	Yes
TM42	Modified US EPA method 8270. Pesticides and herbicides by GC-MS	PM8	End over end extraction of solid samples for organic analysis. The solvent mix varies depending on analysis required.			AR	Yes
TM65	Asbestos Bulk Identification method based on HSG 248.	PM42	Solid samples undergo a thorough visual inspection for asbestos fibres prior to asbestos identification using TM065.	Yes		AR	
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No
TM74	Analysis of water soluble boron (20:1 extract) by ICP-OES.	PM32	Hot water soluble boron is extracted from dried and ground samples using a 20:1 ratio.	Yes		AD	Yes
TM89	Modified USEPA method OIA-1667. Determination of cyanide by Flow Injection Analyser. Where WAD cyanides are required a Ligand displacement step is carried out before analysis.	PM45	As received solid samples are extracted with 1M NaOH by orbital shaker for Cyanide and Thiocyanate analysis.	Yes		AR	Yes
NONE	No Method Code	NONE	No Method Code			AR	Yes

Exova Jones Environmental

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Omnia
10 Manor Court
2 Barnes Wallis Road
Segensworth
Fareham
PO15 5TH

Attention :	David Pokoj
Date :	6th September, 2018
Your reference :	A11004
Our reference :	Test Report 18/13395 Batch 2
Location :	Amesbury 299
Date samples received :	1st September, 2018
Status :	Final report
Issue :	1

Five samples were received for analysis on 1st September, 2018 of which five were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: David Pokoj
JE Job No.: 18/13395

Report : Solid

Solids: V=60g VOC jar, J=250g glass jar, T=plastic tub

J E Sample No.	119	120	121	122	123						LOD/LOR	Units	Method No.
Sample ID	BH103	BH101	BH101	BH102	BH103								
Depth	3.00	5.00	9.50	6.50	11.00								
COC No / misc													
Containers	B	B	B	B	B								
Sample Date	22/08/2018	20/08/2018	21/08/2018	21/08/2018	22/08/2018								
Sample Type	Soil	Soil	Soil	Soil	Soil								
Batch Number	2	2	2	2	2								
Date of Receipt	01/09/2018	01/09/2018	01/09/2018	01/09/2018	01/09/2018								
Natural Moisture Content	18.2	28.8	23.3	25.5	26.9						<0.1	%	PM4/PM0
Sulphate as SO4 (2:1 Ext) #	0.0029	0.0038	0.0048	0.0046	0.0048						<0.0015	g/l	TM38/PM20
pH #	9.00	9.22	9.00	9.13	9.12						<0.01	pH units	TM73/PM11

Please see attached notes for all abbreviations and acronyms

Client Name: Omnia
Reference: A11004
Location: Amesbury 299
Contact: David Pokoj

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
No deviating sample report results for job 18/13395						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 18/13395

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It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to an Exova Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

JE Job No: 18/13395

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
PM4	Gravimetric measurement of Natural Moisture Content and % Moisture Content at either 35°C or 105°C. Calculation based on ISO 11465 and BS1377.	PM0	No preparation is required.			AR	
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods 325.2 (Chloride), 375.4 (Sulphate), 365.2 (o-Phosphate), 353.1 (TON), 354.1 (Nitrite), 350.1 (NH4+), 7196A (Hex Cr)	PM20	Extraction of dried and ground or as received samples with deionised water in a 2:1 water to solid ratio using a reciprocal shaker for all analytes except hexavalent chromium. Extraction of as received sample using 10:1 ratio of 0.2M sodium hydroxide to soil for hexavalent chromium using a reciprocal shaker.	Yes		AD	Yes
TM73	Modified US EPA methods 150.1 and 9045D and BS1377:1990. Determination of pH by Metrohm automated probe analyser.	PM11	Extraction of as received solid samples using one part solid to 2.5 parts deionised water.	Yes		AR	No

APPENDIX VII

ORIGIN OF GAC VALUES

Constituent	Unit	GAC	Origin of Risk Assessment Value
Arsenic	mg/kg	37	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Arsenic
Beryllium	mg/kg	1.7	LQM CIEH Suitable for Use Levels (S4UL) 2015
Boron	mg/kg	290	
Cadmium	mg/kg	11	
Chromium (III)	mg/kg	910	
Chromium (VI)	mg/kg	6	
Copper	mg/kg	2400	
Lead	mg/kg	200	Category 4 Screening Level (C4SL) utilising exposure parameters from CLEA SR3 report.
Mercury	mg/kg	40	LQM CIEH Suitable for Use Levels (S4UL) 2015- Inorganic Mercury
Nickel	mg/kg	180	LQM CIEH Suitable for Use Levels (S4UL) 2015
Selenium	mg/kg	250	
Vanadium	mg/kg	410	
Zinc	mg/kg	3700	
General Inorganics			
Cyanide	mg/kg	50	Dutch Intervention Values 2010 - Complex Cyanide
Organics			
General Organics			
Phenol	mg/kg	280	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
PAH			
Naphthalene	mg/kg	2.3	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM
Acenaphthylene	mg/kg	170	
Acenaphthene	mg/kg	210	
Fluorene	mg/kg	170	
Phenanthrene	mg/kg	95	
Anthracene	mg/kg	2400	
Fluoranthene	mg/kg	280	
Pyrene	mg/kg	620	
Benzo(a)Anthracene	mg/kg	7.2	
Chrysene	mg/kg	15	
Benzo(b)Fluoranthene	mg/kg	2.6	
Benzo(k)Fluoranthene	mg/kg	77	
Benzo(a)Pyrene	mg/kg	2.2	
Indeno(123-cd)Pyrene	mg/kg	27	
Dibenzo(a,h)Anthracene	mg/kg	0.24	
Benzo(ghi)Perylene	mg/kg	320	

Constituent	Unit	GAC	Origin of Risk Assessment Value
BTEX			
Benzene	mg/kg	0.087	LQM CIEH Suitable for Use Levels (S4UL) 2015 1%SOM
Toluene	mg/kg	130	
Ethylbenzene	mg/kg	47	
Xylenes	mg/kg	56	LQM CIEH Suitable for Use Levels (S4UL) 2015 1% SOM o-Xylene
TPH CWG			
Aliphatic			LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM
Aliphatic EC 5-6	mg/kg	42	
Aliphatic EC >6-8	mg/kg	100	
Aliphatic EC >8-10	mg/kg	27	
Aliphatic EC >10-12	mg/kg	130	
Aliphatic EC > 12-16	mg/kg	1100	
Aliphatic EC > 16-35	mg/kg	65000	
Aliphatic EC >35-44	mg/kg	65000	
Aromatic			LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM
Aromatic EC 5-7	mg/kg	70	
Aromatic EC>7-8	mg/kg	130	
Aromatic EC> 8-10	mg/kg	34	
Aromatic EC> 10-12	mg/kg	74	
Aromatic EC> 12-16	mg/kg	140	
Aromatic EC> 16-21	mg/kg	260	
Aromatic EC> 21-35	mg/kg	1100	
Aromatic EC> 35-44	mg/kg	1100	
Banded TPH			
Aliphatic EC 5-6	mg/kg	42	LQM CIEH Suitable for Use Levels (S4UL) 2015 based on a sandy loam as defined in SR3 (EA 2009) 1% SOM, utilising the most conservative of the Ali/Aro chain lengths.
Aliphatic EC >6-8	mg/kg	100	
Aliphatic EC >8-10	mg/kg	27	
Aromatic EC> 10-12	mg/kg	74	
Aromatic EC> 12-16	mg/kg	140	
Aromatic EC> 16-21	mg/kg	260	
Aromatic EC> 21-35	mg/kg	1100	
Aromatic EC> 35-44	mg/kg	1100	
Herbicides and Pesticides			
Bromoxynil	mg/kg	74	Derived from USEPA Screening Criteria
Dicamba	mg/kg	2700	
MCPA	mg/kg	45	
MCPB	mg/kg	390	

Constituent	Unit	GAC	Origin of Risk Assessment Value
Pentachlorophenol	mg/kg	14	
Picloram	mg/kg	6200	
DDE	mg/kg	2.0	
DDT	mg/kg	1.9	

APPENDIX VIII

GEOTECHNICAL ANALYSIS CERTIFICATES

TEST CERTIFICATE

Determination of California Bearing Ratio

Tested in Accordance with BS 1377-4: 1990: Clause 7

i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	20/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

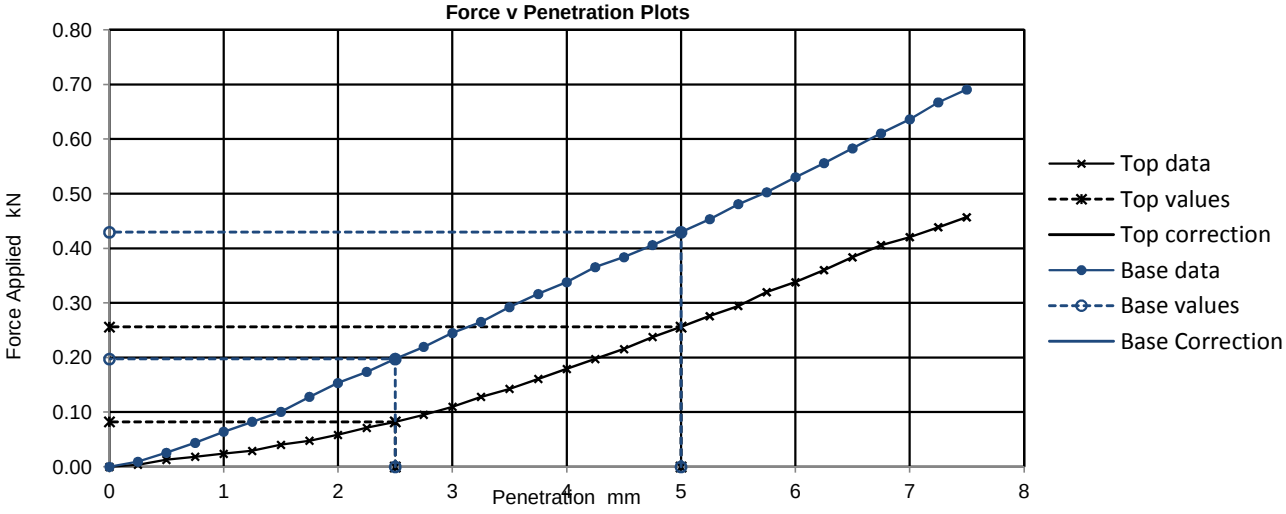
Test Results:

Laboratory Reference:	1037428	Depth Top [m]:	0.30
Hole No.:	TP101	Depth Base [m]:	0.70
Sample Reference:	Not Given	Sample Type:	B

Specimen Preparation:

Condition	Remoulded			Soaking details		
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking	7	days
				Time to surface	1.00	days
Sample Description:	Cream colour CHALK			Amount of swell recorded	1.62	mm
Material retained on 20mm sieve removed		35	%	Dry density after soaking	1.37	Mg/m^3
Initial Specimen details	Bulk density	1.66	Mg/m^3	Surcharge applied	8	kg
	Dry density	1.39	Mg/m^3		4.8	kPa
	Moisture content	20	%			

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, % 2.5mm	5mm	Highest	Average	Moisture Content %
TOP		0.62	1.3	1.3		31
BASE		1.5	2.1	2.1		31

Remarks: Test carried out with > 25 % retained on 20mm as per clause 7.2.1.2

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

for and on behalf of i2 Analytical Ltd

"Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation.
This report may not be reproduced other than in full without the prior written approval of the issuing laboratory.
The results included within the report are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

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Determination of California Bearing Ratio

Tested in Accordance with BS 1377-4: 1990: Clause 7

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Croxley Green Business Park
Watford Herts WD18 8YS

UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	20/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

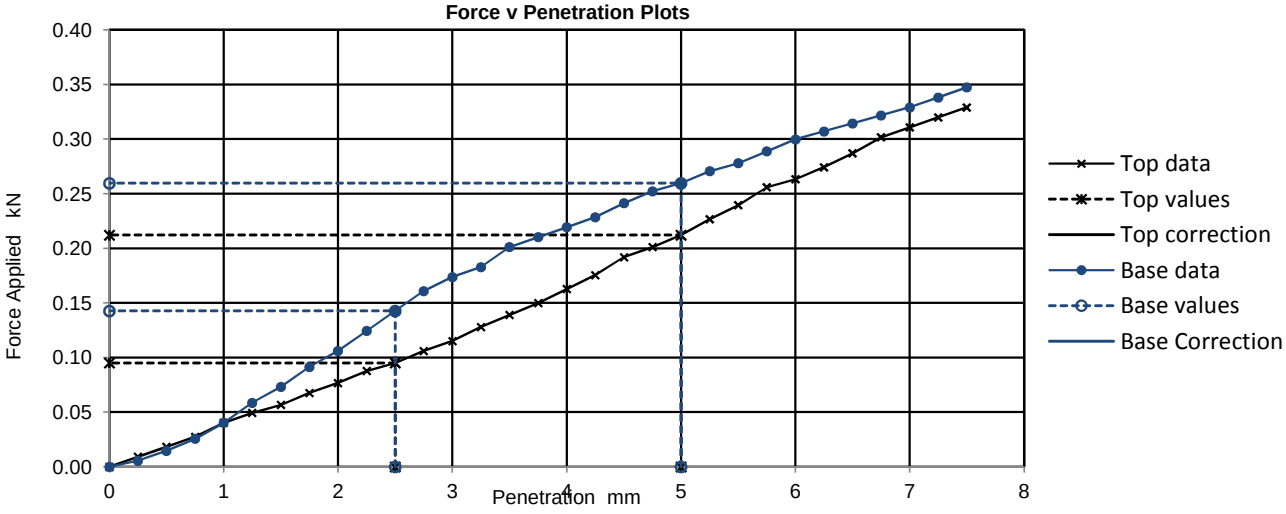
Test Results:

Laboratory Reference:	1037429	Depth Top [m]:	0.30
Hole No.:	TP105	Depth Base [m]:	0.89
Sample Reference:	Not Given	Sample Type:	B

Specimen Preparation:

Condition	Remoulded			Soaking details		
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking	7	days
				Time to surface	2.00	days
Sample Description:	Light grey CHALK			Amount of swell recorded	2.97	mm
Material retained on 20mm sieve removed		27	%	Dry density after soaking	1.43	Mg/m3
Initial Specimen details	Bulk density	1.72	Mg/m3	Surcharge applied	8	kg
	Dry density	1.46	Mg/m3		4.8	kPa
	Moisture content	18	%			

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.7	1.1	1.1		30
BASE	No	1.1	1.3	1.3		30

Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

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Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	20/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

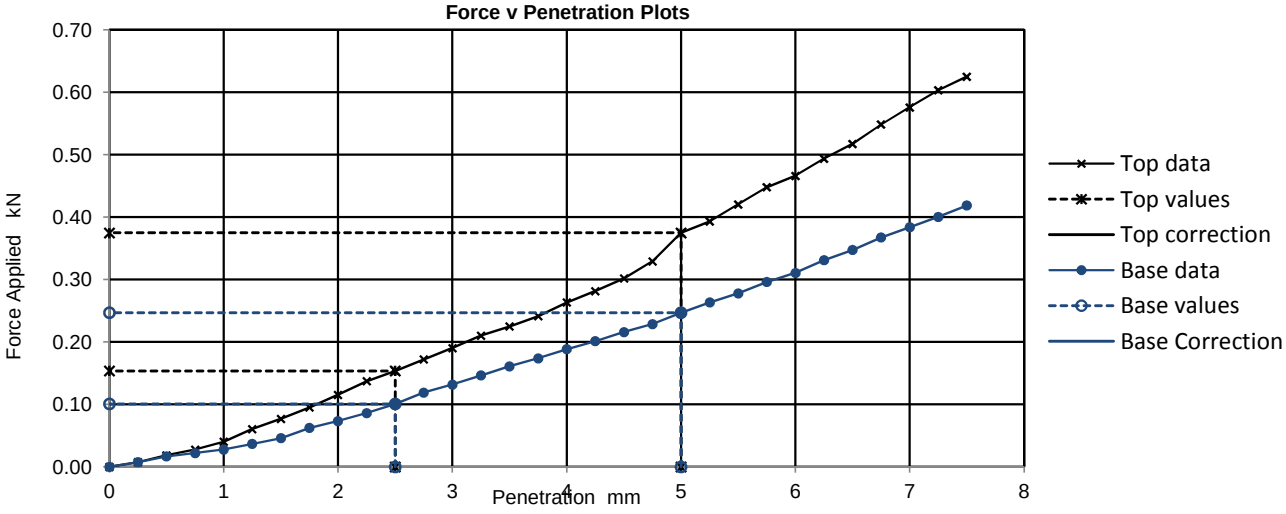
Test Results:

Laboratory Reference:	1037430	Depth Top [m]:	0.50
Hole No.:	TP104	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B

Specimen Preparation:

Condition	Remoulded			Soaking details		
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking	9	days
				Time to surface	1.00	days
Sample Description:	White CHALK			Amount of swell recorded	1.90	mm
Material retained on 20mm sieve removed		14	%	Dry density after soaking	1.44	Mg/m3
Initial Specimen details	Bulk density	1.82	Mg/m3	Surcharge applied	8	kg
	Dry density	1.46	Mg/m3		4.8	kPa
	Moisture content	24	%			

Force v Penetration Plots



Results	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	1.2	1.9	1.9		28
BASE	No	0.8	1.2	1.2		29

Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

for and on behalf of i2 Analytical Ltd

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UKAS TESTING 4041

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Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	21/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

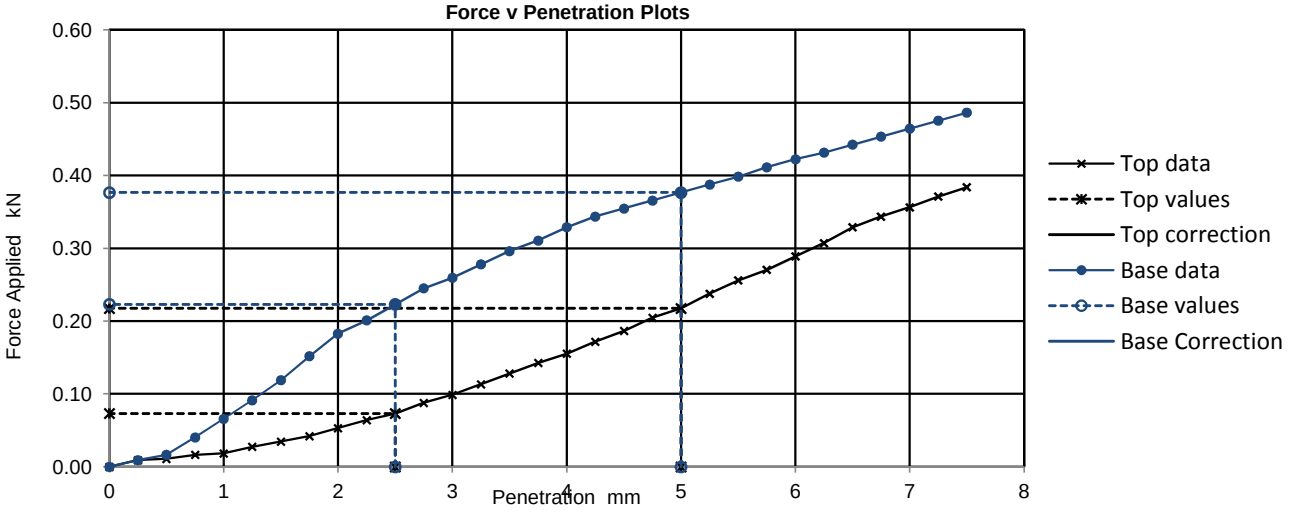
Test Results:

Laboratory Reference:	1037431	Depth Top [m]:	0.20
Hole No.:	TP107	Depth Base [m]:	0.80
Sample Reference:	Not Given	Sample Type:	B

Specimen Preparation:

Condition	Remoulded			Soaking details		
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking	9	days
				Time to surface	1.00	days
Sample Description:	Light grey and white CHALK			Amount of swell recorded	2.59	mm
Material retained on 20mm sieve removed		31	%	Dry density after soaking	1.42	Mg/m3
Initial Specimen details	Bulk density	1.68	Mg/m3	Surcharge applied	8	kg
	Dry density	1.45	Mg/m3		4.9	kPa
	Moisture content	16	%			

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.6	1.1	1.1		30
BASE	No	1.7	1.9	1.9		30

Remarks: Test carried out with > 25 % retained on 20mm as per clause 7.2.1.2

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

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UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	21/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

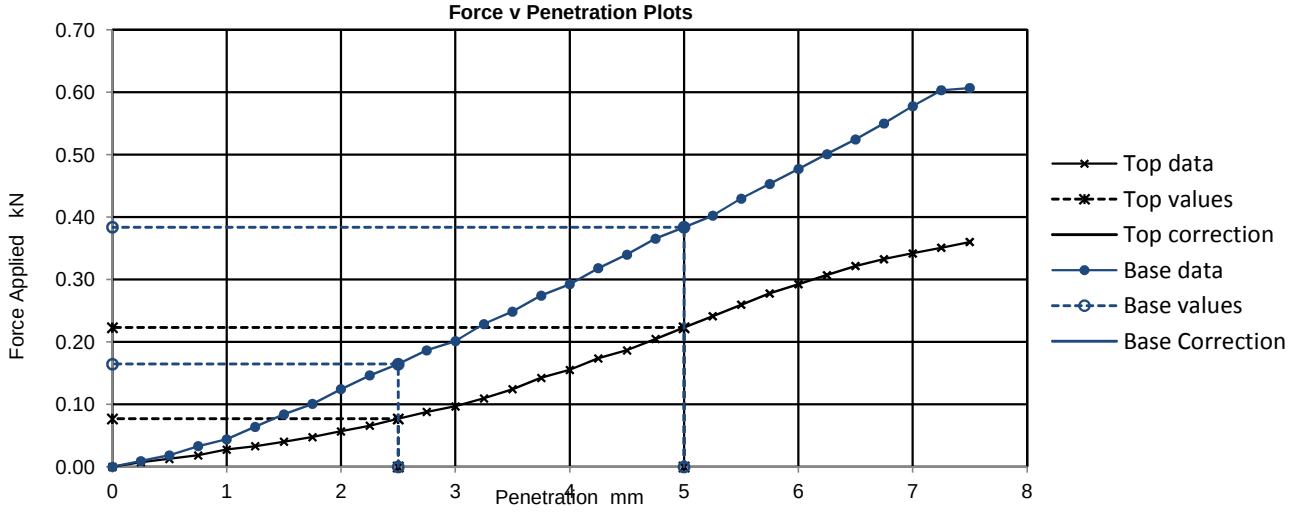
Test Results:

Laboratory Reference:	1037432	Depth Top [m]:	0.45
Hole No.:	TP108	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B

Specimen Preparation:

Condition	Remoulded			Soaking details		
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking	7	days
				Time to surface	1.00	days
Sample Description:	Cream colour CHALK			Amount of swell recorded	1.13	mm
Material retained on 20mm sieve removed		22	%	Dry density after soaking	1.44	Mg/m3
Initial Specimen details	Bulk density	1.78	Mg/m3	Surcharge applied	8	kg
	Dry density	1.45	Mg/m3		4.9	kPa
	Moisture content	23	%			

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.6	1.1	1.1		28
BASE	No	1.2	1.9	1.9		28

Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

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Watford Herts WD18 8YS

UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	21/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

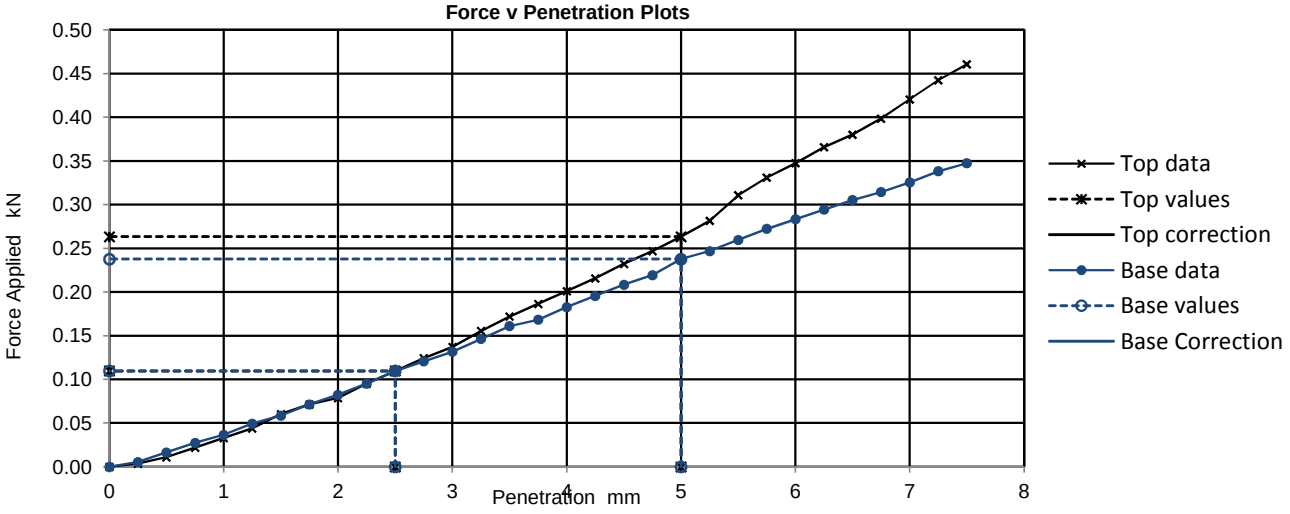
Test Results:

Laboratory Reference:	1037433	Depth Top [m]:	0.15
Hole No.:	TP110	Depth Base [m]:	0.70
Sample Reference:	Not Given	Sample Type:	B

Specimen Preparation:

Condition	Remoulded			Soaking details		
Details	Recompacted with specified standard effort using 2.5kg rammer			Period of soaking	7	days
				Time to surface	2.00	days
Sample Description:	White CHALK			Amount of swell recorded	1.19	mm
Material retained on 20mm sieve removed		24	%	Dry density after soaking	1.44	Mg/m3
Initial Specimen details	Bulk density	1.76	Mg/m3	Surcharge applied	8	kg
	Dry density	1.45	Mg/m3		4.8	kPa
	Moisture content	22	%			

Force v Penetration Plots



Results

	Curve correction applied	CBR Values, %				Moisture Content %
		2.5mm	5mm	Highest	Average	
TOP	No	0.8	1.3	1.3	1.3	28
BASE	No	0.8	1.2	1.2		28

Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

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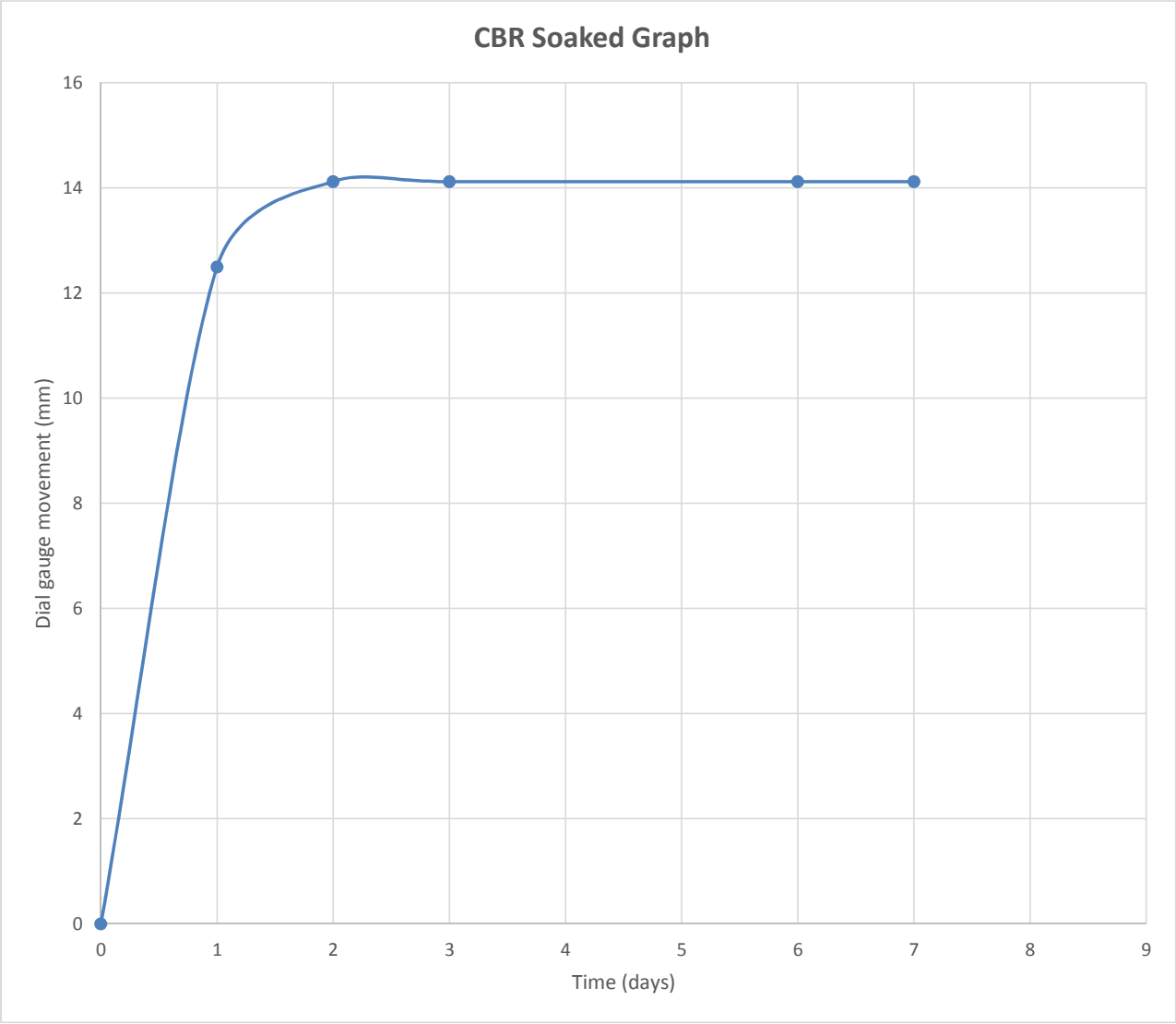
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

Test Results

Laboratory Reference:	1037428	Depth Top [m]:	0.30
Hole No.:	TP101	Depth Base [m]:	0.70
Sample Reference:	Not Given	Sample Type:	B



Remarks: Test carried out with > 25 % retained on 20mm as per clause 7.2.1.2

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

Tested in Accordance with BS 1377-4: 1990: Clause 7

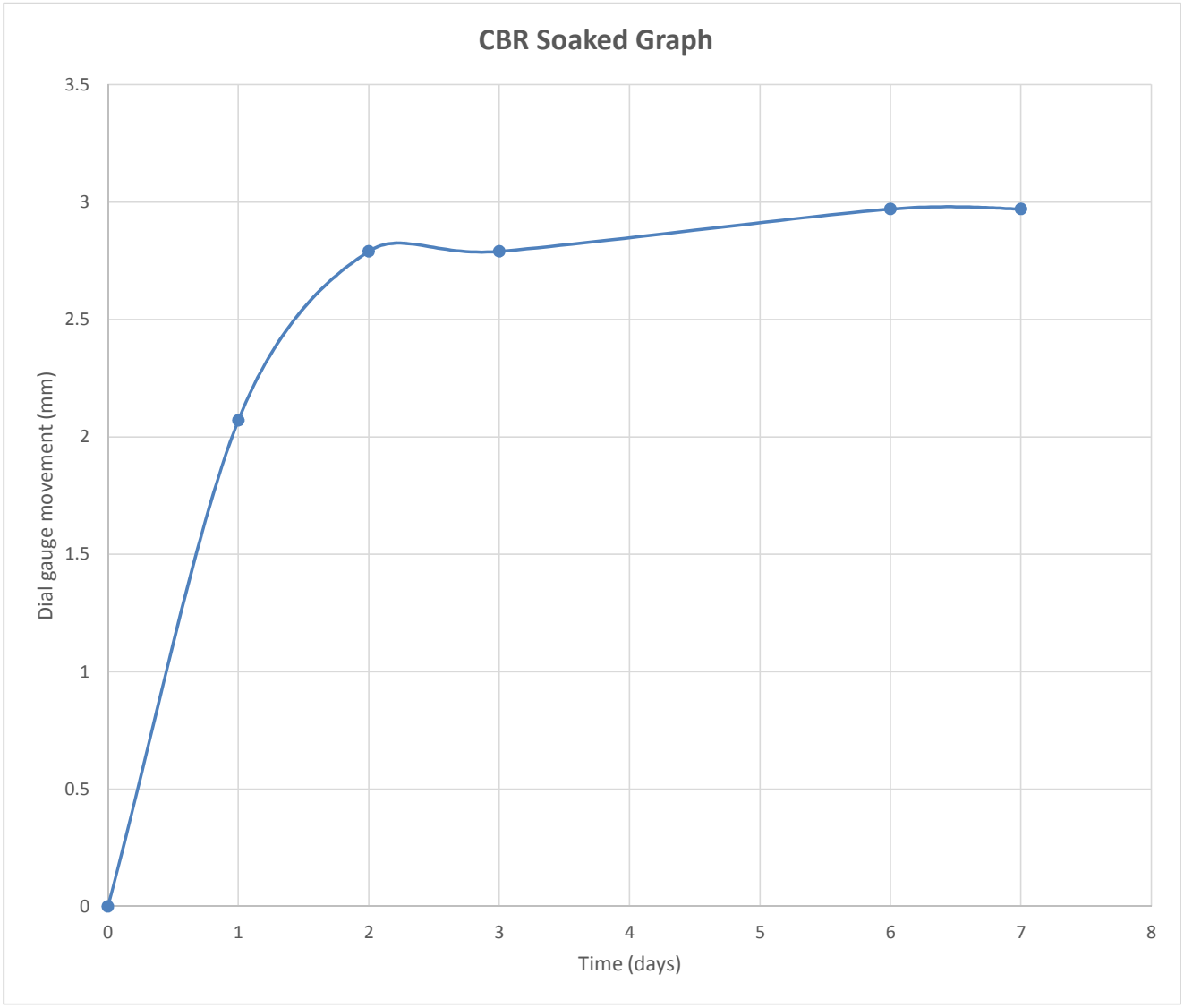
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	20/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

Test Results

Laboratory Reference:	1037429	Depth Top [m]:	0.30
Hole No.:	TP105	Depth Base [m]:	0.89
Sample Reference:	Not Given	Sample Type:	B



Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

Tested in Accordance with BS 1377-4: 1990: Clause 7

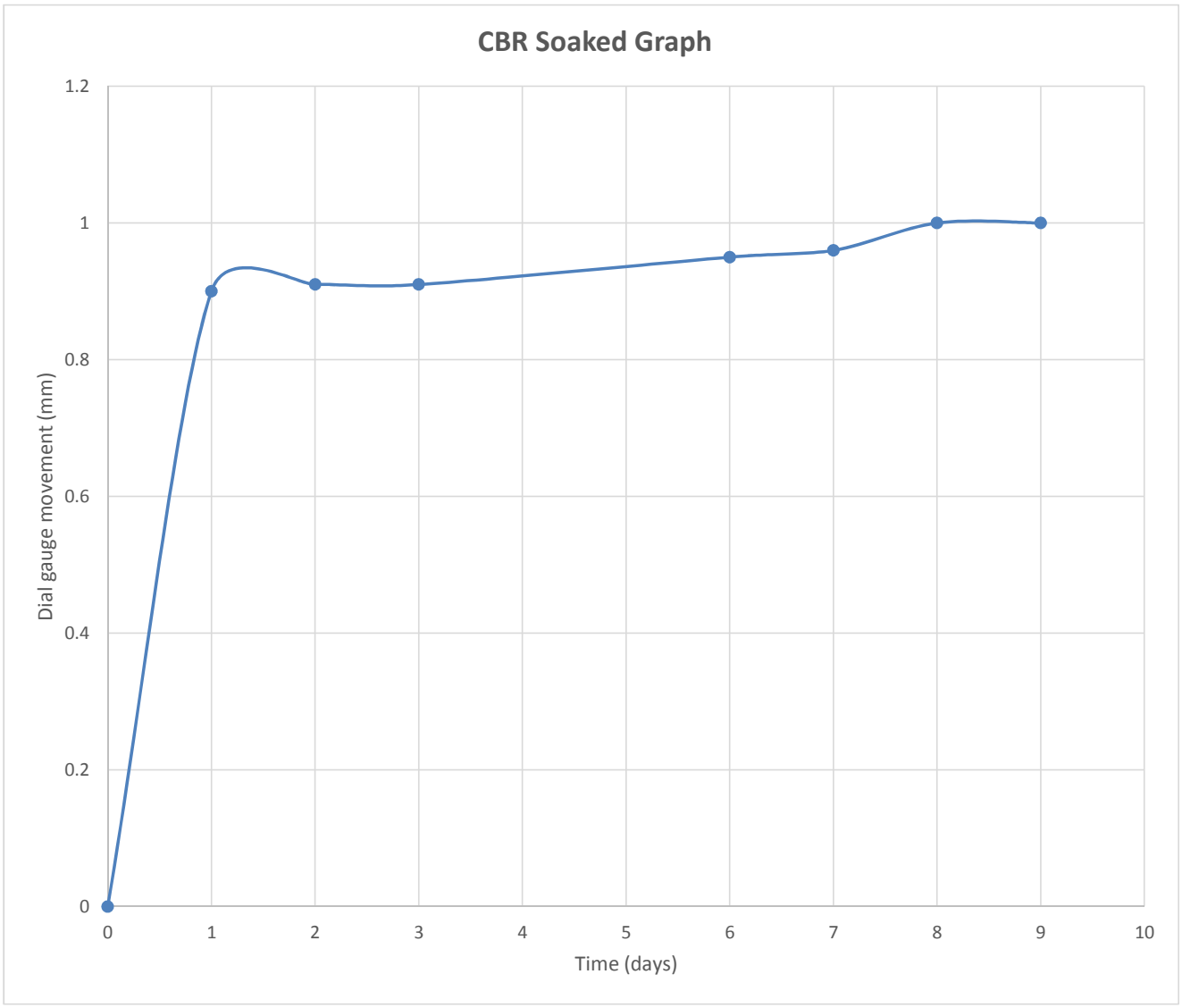
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	20/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

Test Results

Laboratory Reference:	1037430	Depth Top [m]:	0.50
Hole No.:	TP104	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B



Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 24/09/2018

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

Tested in Accordance with BS 1377-4: 1990: Clause 7

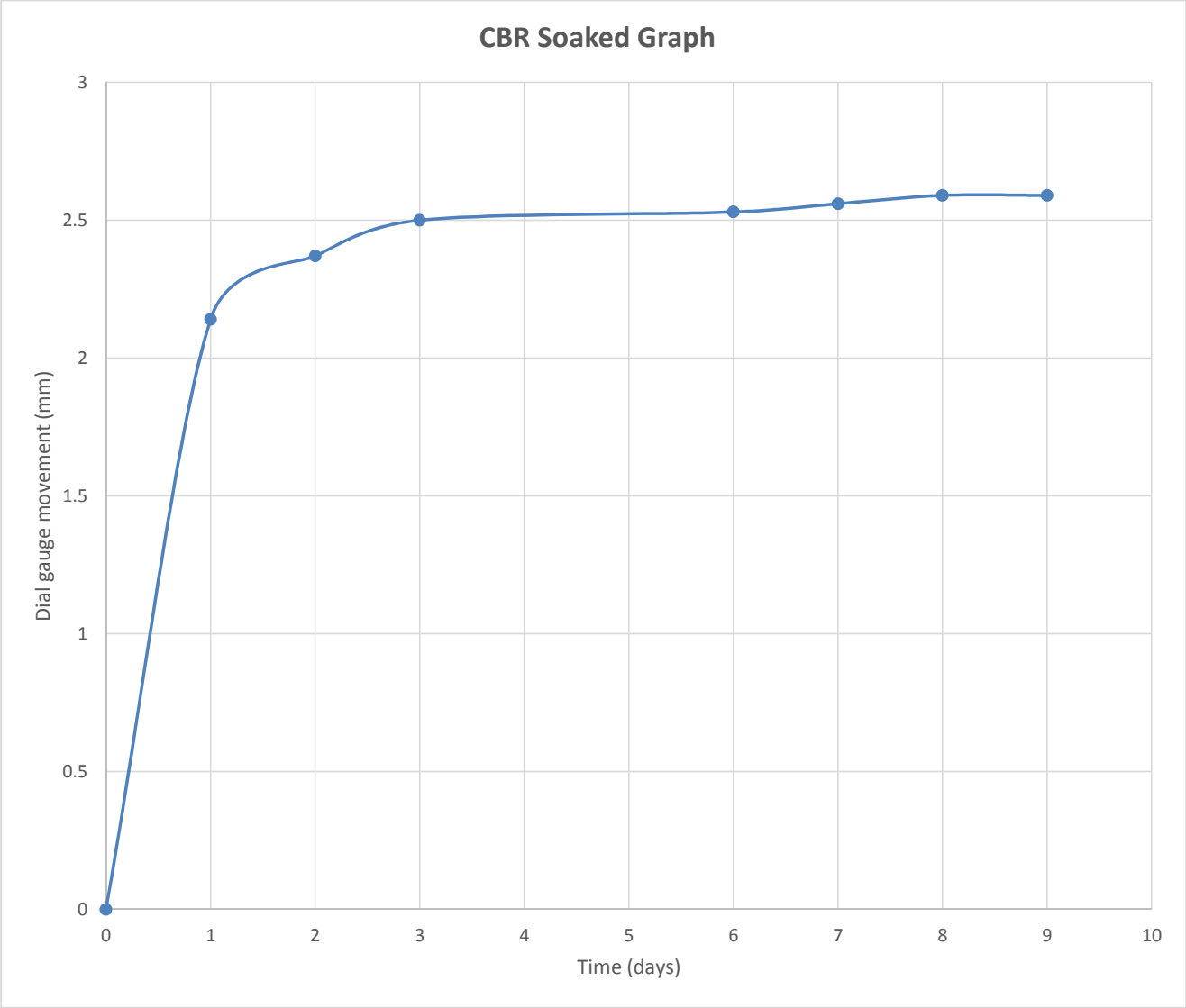
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	21/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

Test Results

Laboratory Reference:	1037431	Depth Top [m]:	0.20
Hole No.:	TP107	Depth Base [m]:	0.80
Sample Reference:	Not Given	Sample Type:	B



Remarks: Test carried out with > 25 % retained on 20mm as per clause 7.2.1.2

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 24/09/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

Tested in Accordance with BS 1377-4: 1990: Clause 7

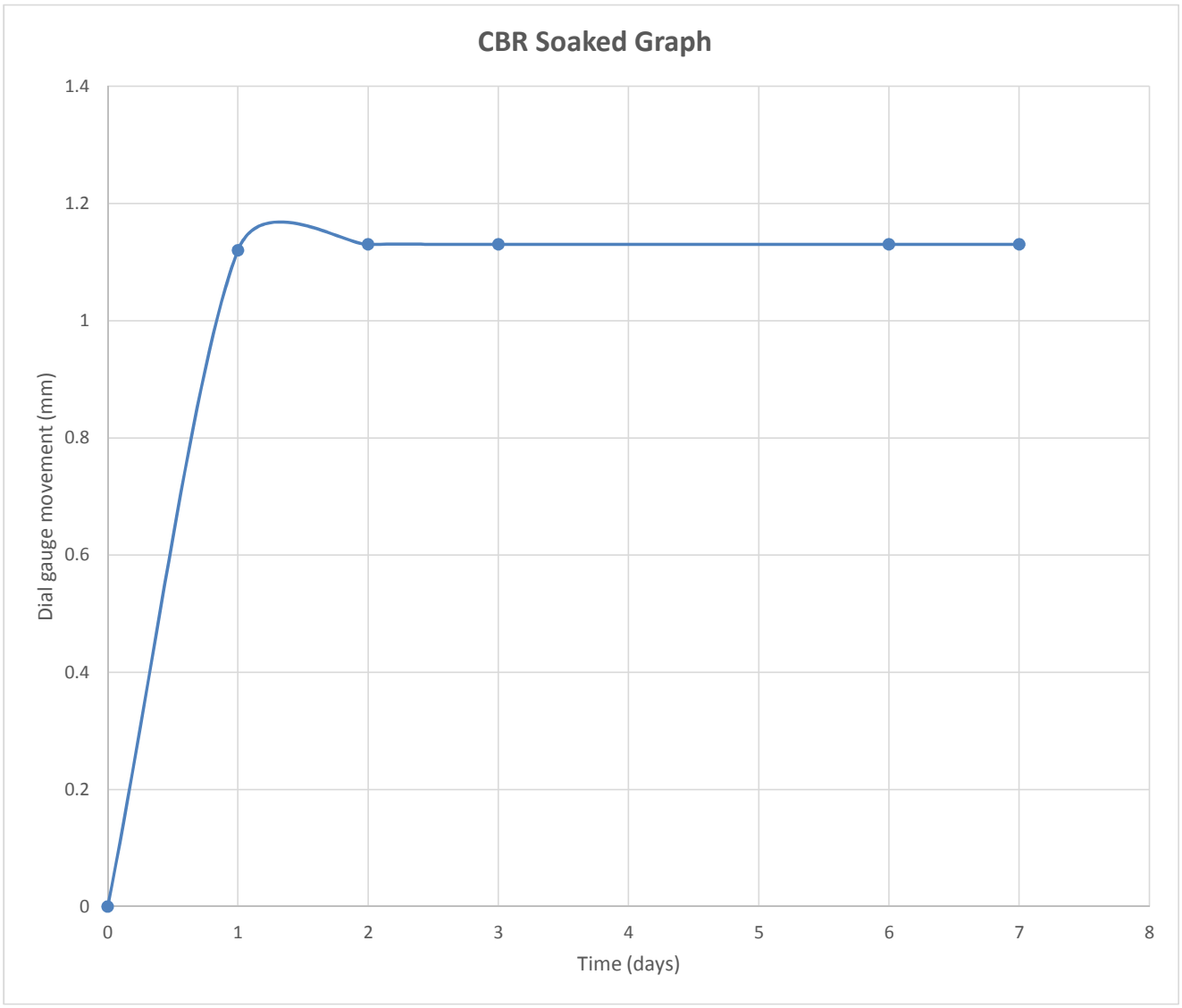
i2 Analytical Ltd
7 Woodshots Meadow
Croxley Green Business Park
Watford Herts WD18 8YS

UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	21/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

Test Results

Laboratory Reference:	1037432	Depth Top [m]:	0.45
Hole No.:	TP108	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B



Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 24/09/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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TEST CERTIFICATE

Determination of California Bearing Ratio

Tested in Accordance with BS 1377-4: 1990: Clause 7

i2 Analytical Ltd
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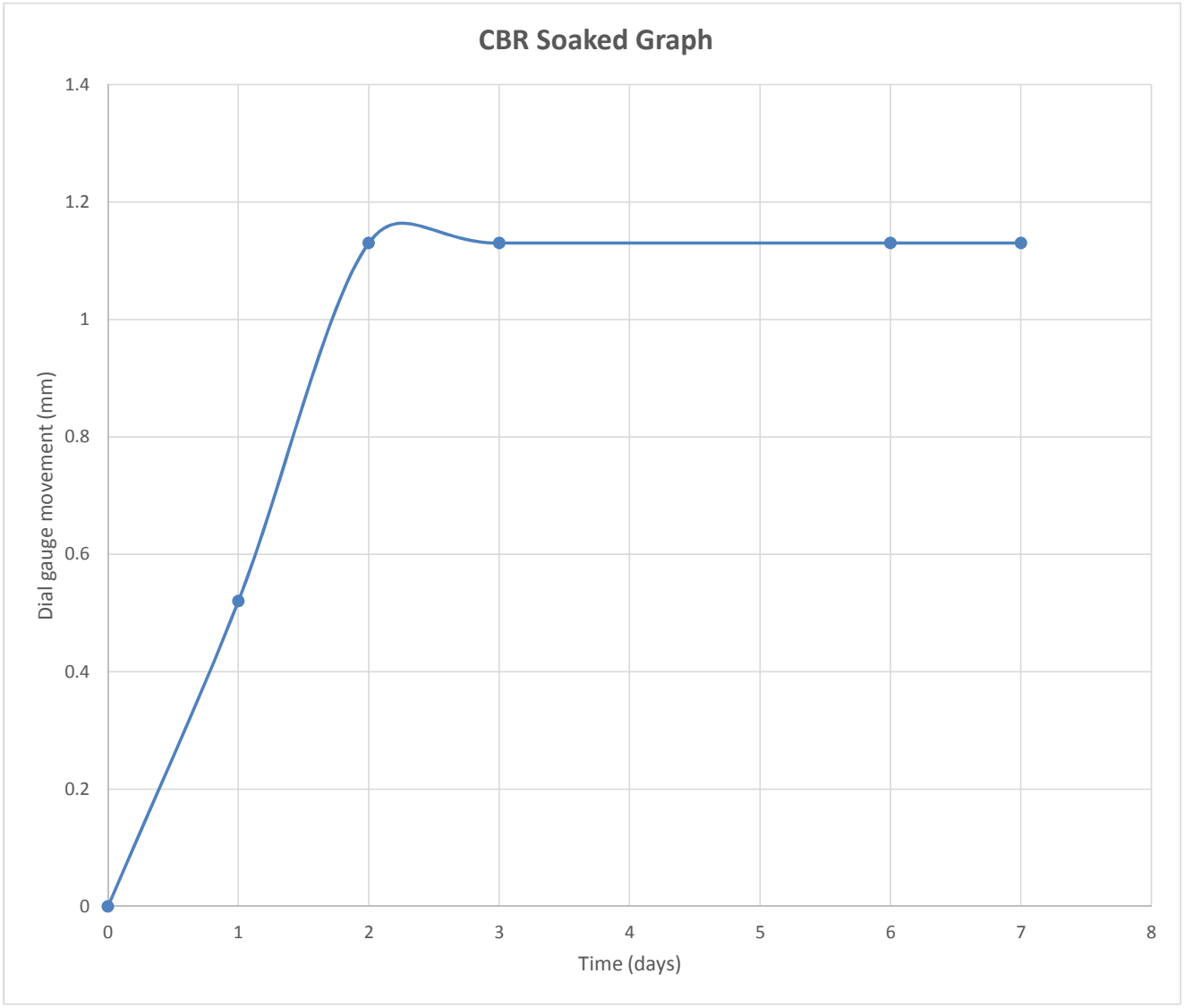
UKAS TESTING 4041

Client:	OMNIA Environmental Consulting	Client Reference:	A11004
Client Address:	10 Manor Court Barnes Wallis Road Segensworth Fareham PO15 5TH	Job Number:	18-98791
		Date Sampled:	21/08/2018
		Date Received:	31/08/2018
Contact:	Grace Larcombe	Date Tested:	12/09/2018
Site Name:	Amesbury 299	Sampled By:	GL
Site Address:	Not Given		

Test Results

Laboratory Reference:	1037433	Depth Top [m]:	0.15
Hole No.:	TP110	Depth Base [m]:	0.70
Sample Reference:	Not Given	Sample Type:	B



Remarks:

Test/ Specimen specific remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 24/09/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

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APPENDIX IX

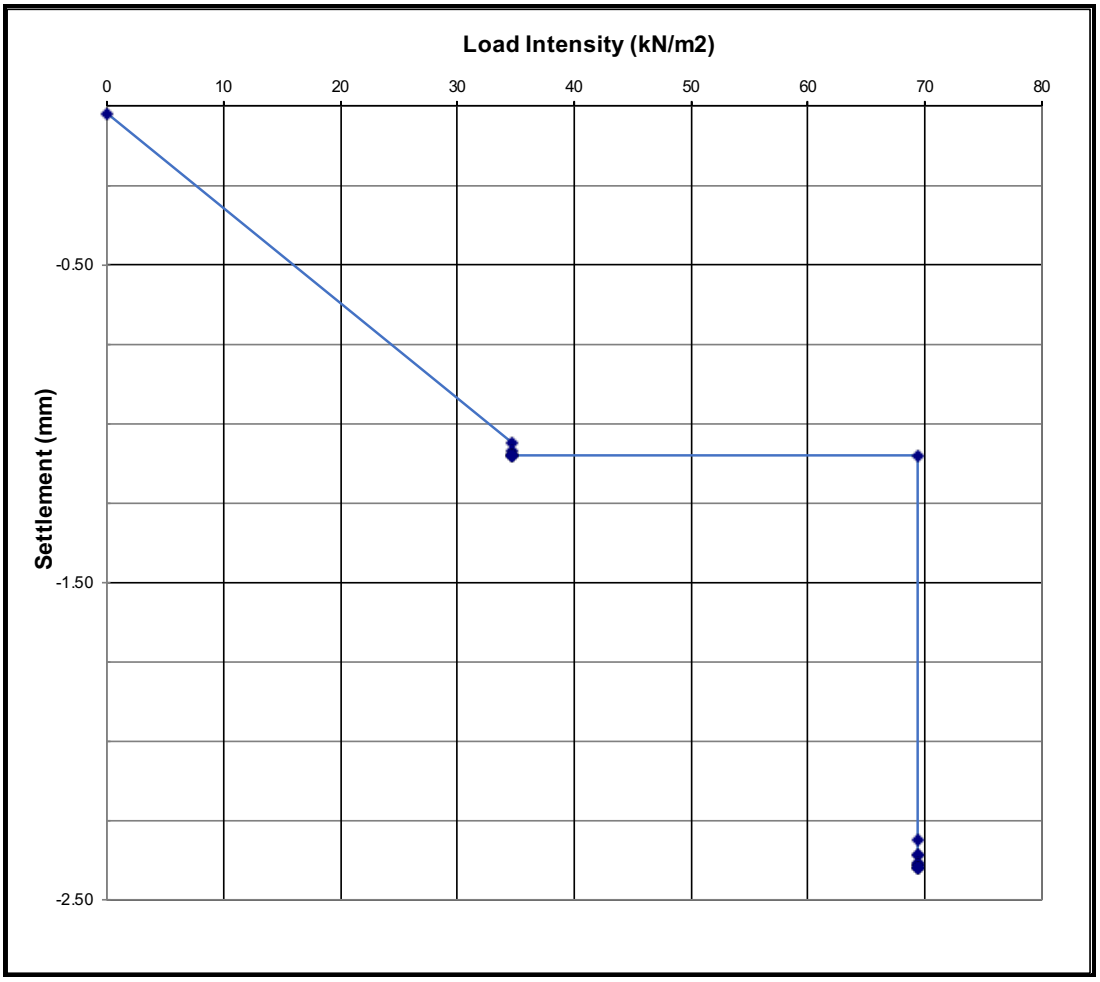
PLATE LOAD TESTING CERTIFICATES

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	21/08/2018
Site Ref:	A11004	**Test Location:**	PL101
Plate Diameter (mm):	600	**Test No.:**	1
Test Depth (m bgl):	0.47		
Maximum Applied Pressure (kN/m2):	69	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	2.40	**Strata Description:**	Granular



Equivalent CBR Value of 6.9%

Comments

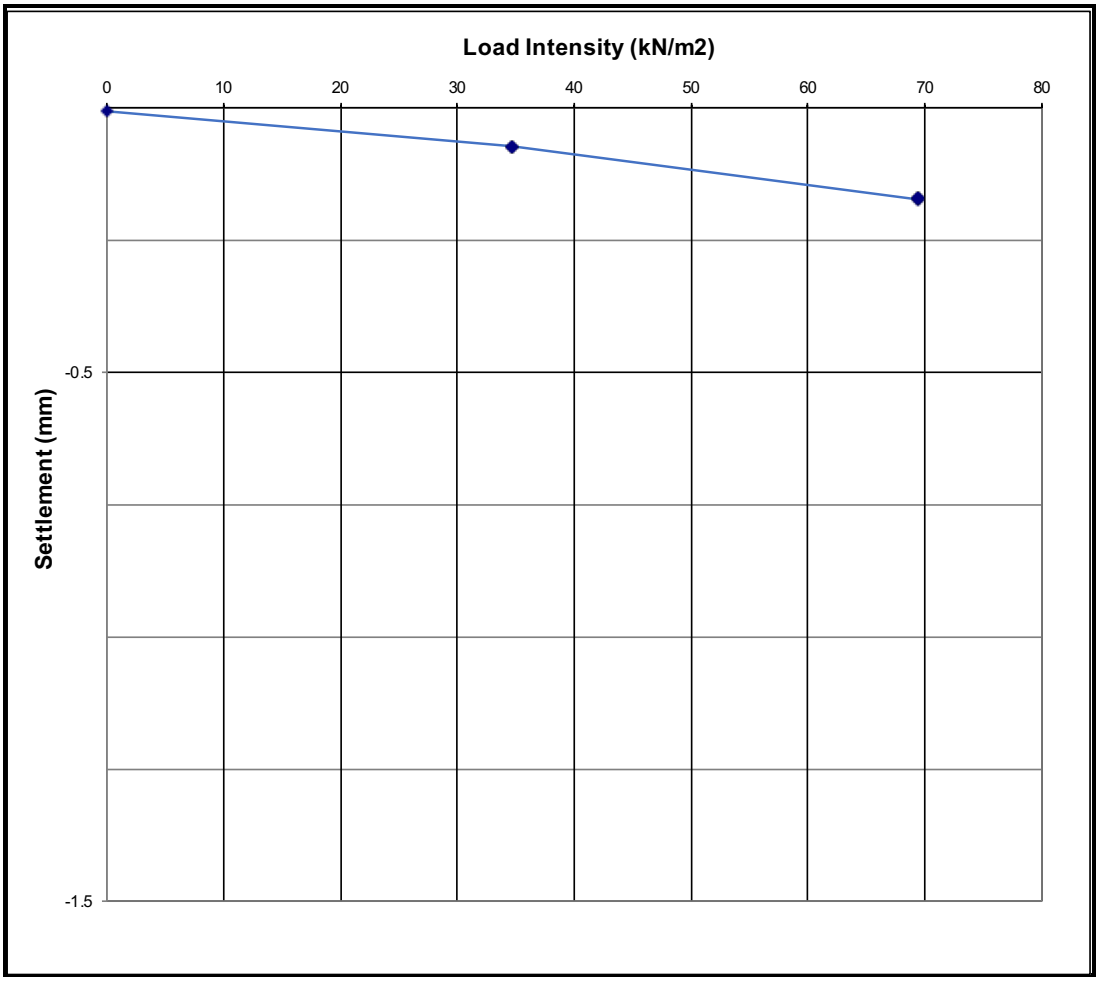
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	21/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	21/08/2018
Site Ref:	A11004	**Test Location:**	PL102
Plate Diameter (mm):	600	**Test No.:**	1
Test Depth (m bgl):	0.40		
Maximum Applied Pressure (kN/m2):	69	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	0.17	**Strata Description:**	Granular



Test Unsuccessful

Comments

The test did not reach 1.25mm settlement and therefore a CBR value cannot be calculated.

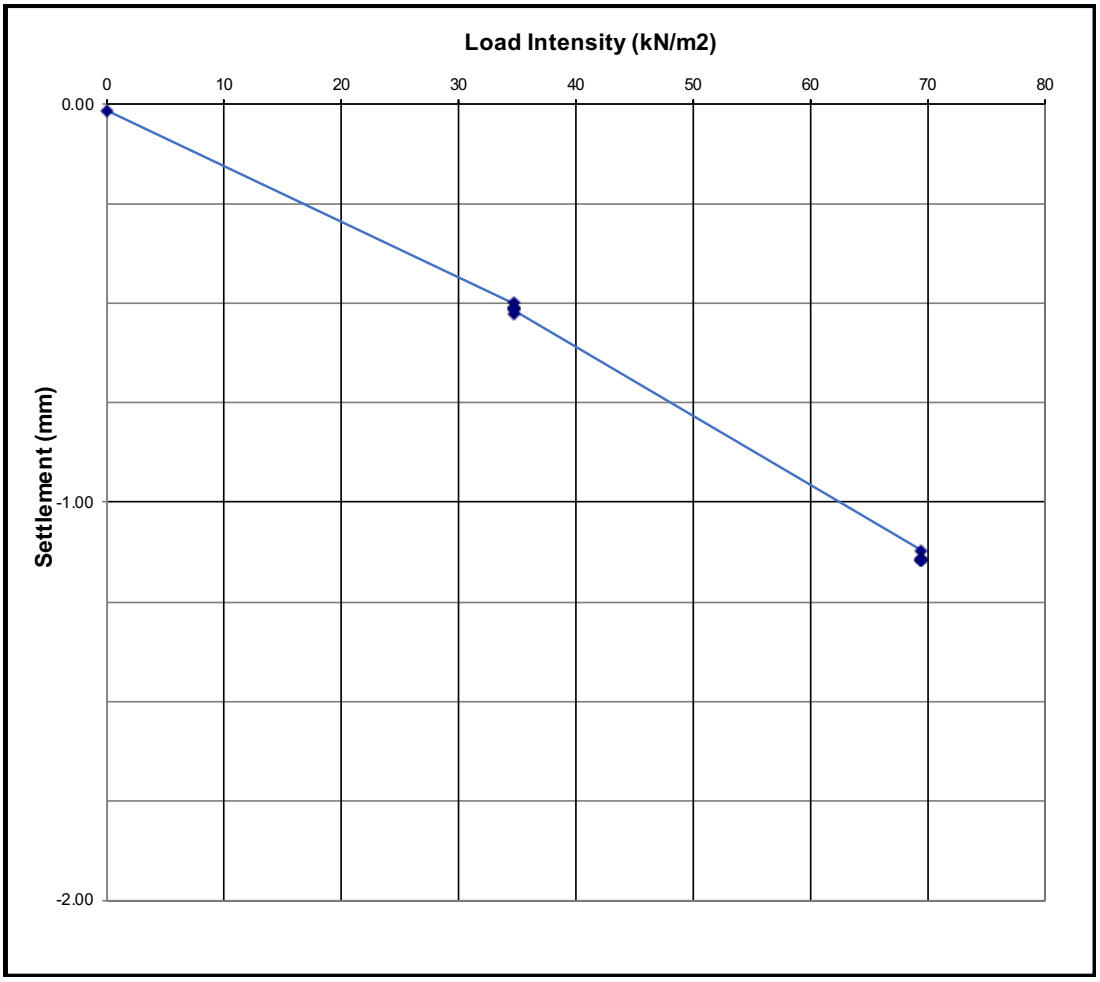
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	21/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	21/08/2018
Site Ref:	A11004	**Test Location:**	PL103
Plate Diameter (mm):	600	**Test No.:**	1
Test Depth (m bgl):	0.25		
Maximum Applied Pressure (kN/m2):	69	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	1.15	**Strata Description:**	Granular



Test Unsuccessful

Comments

The test did not reach 1.25mm settlement and therefore a CBR value cannot be calculated.

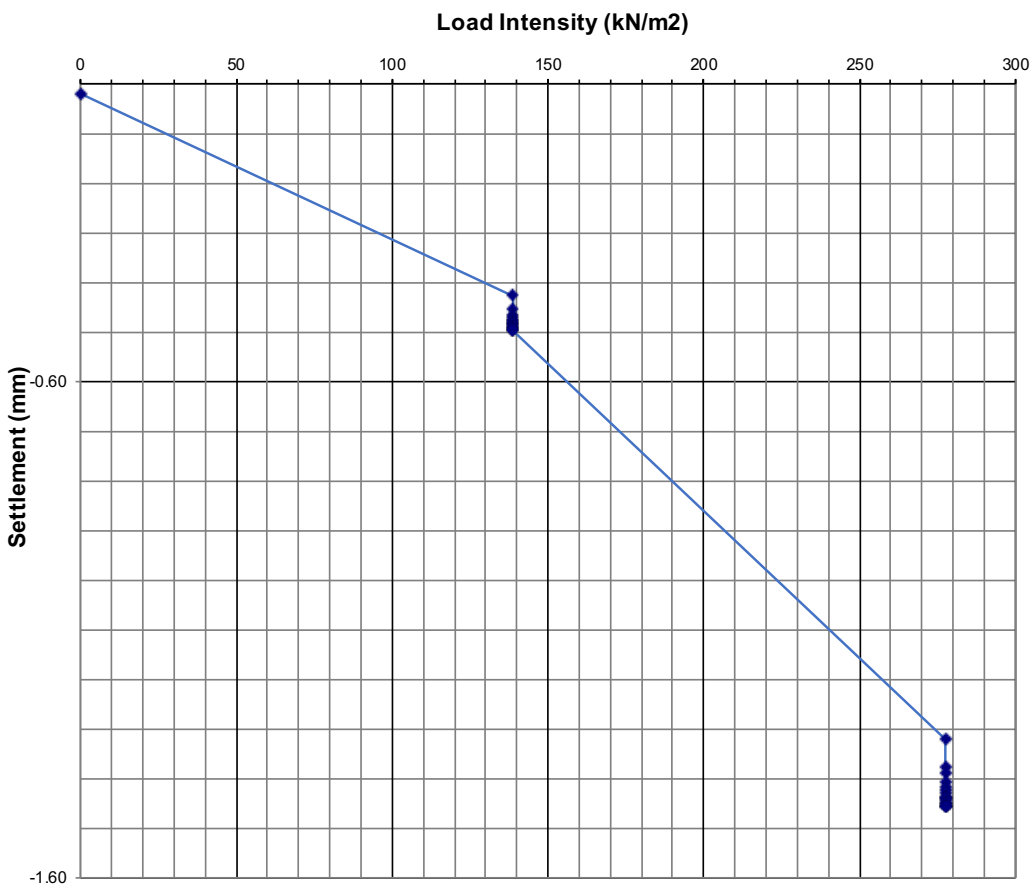
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	21/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	22/08/2018
Site Ref:	A11004	**Test Location:**	PL104
Plate Diameter (mm):	300	**Test No.:**	1
Test Depth (m bgl):	0.26		
Maximum Applied Pressure (kN/m2):	277	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	1.46	**Strata Description:**	Granular



Equivalent CBR Value of 25.2%

Comments

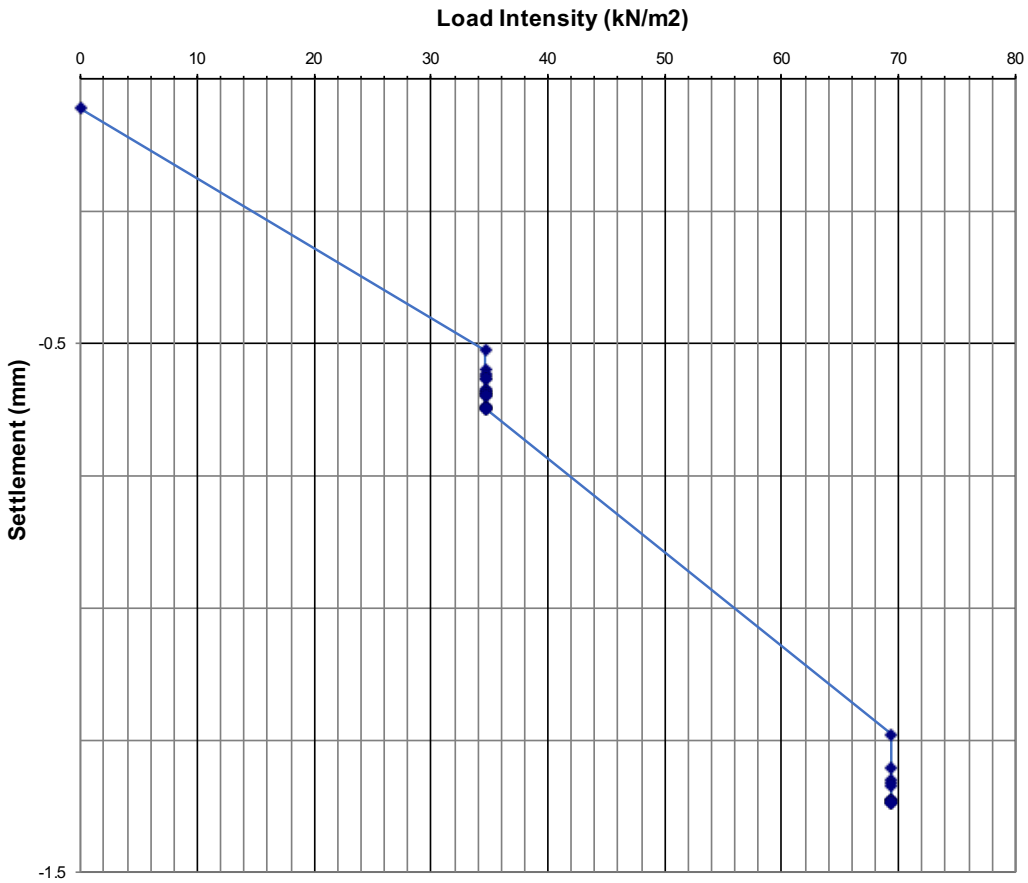
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	22/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	22/08/2018
Site Ref:	A11004	**Test Location:**	PL105
Plate Diameter (mm):	600	**Test No.:**	1
Test Depth (m bgl):	0.20		
Maximum Applied Pressure (kN/m2):	69	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	1.37	**Strata Description:**	Granular



Equivalent CBR Value of 6.9%

Comments

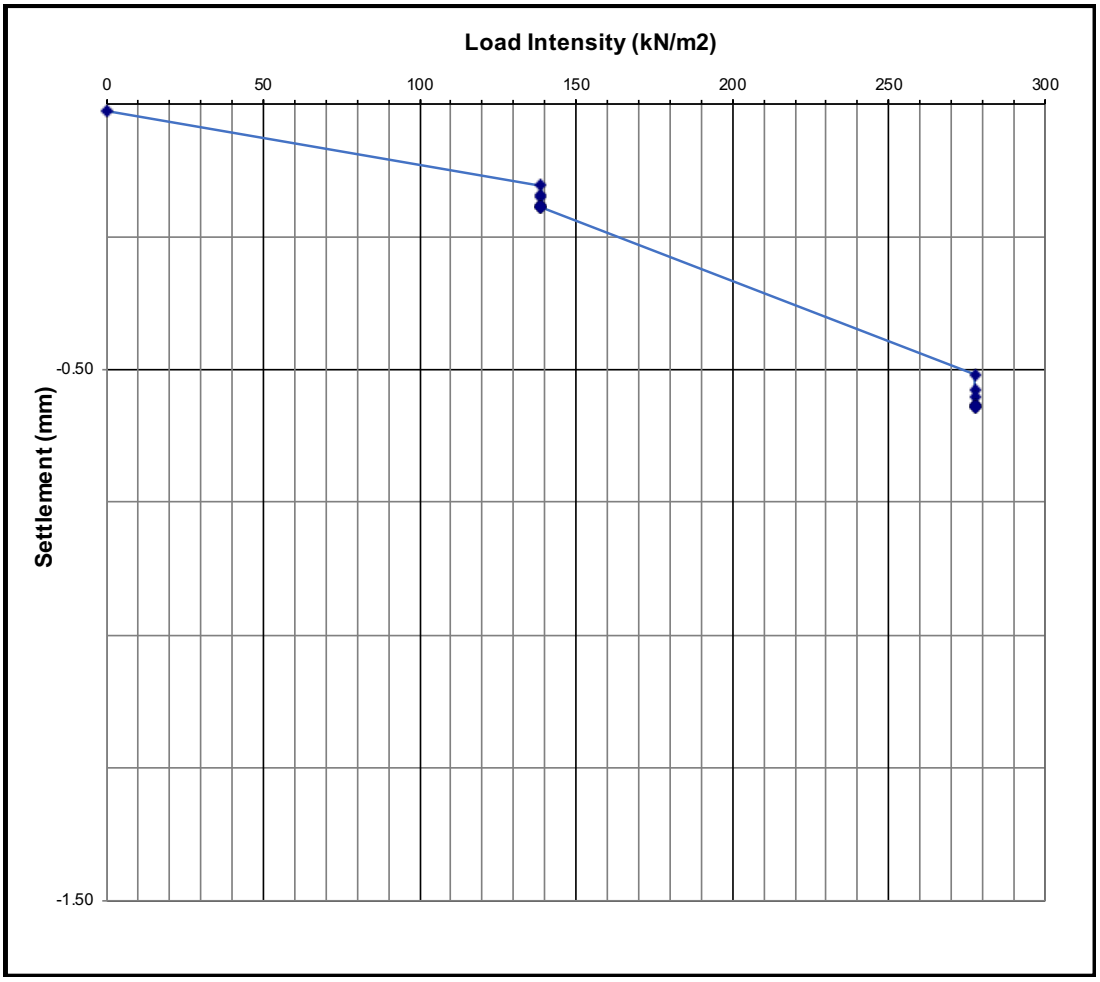
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	22/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	22/08/2018
Site Ref:	A11004	**Test Location:**	PL106
Plate Diameter (mm):	300	**Test No.:**	1
Test Depth (m bgl):	0.38		
Maximum Applied Pressure (kN/m2):	277	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	0.57	**Strata Description:**	Granular



Test Unsuccessful

Comments

The test did not reach 1.25mm settlement and therefore a CBR value cannot be calculated.

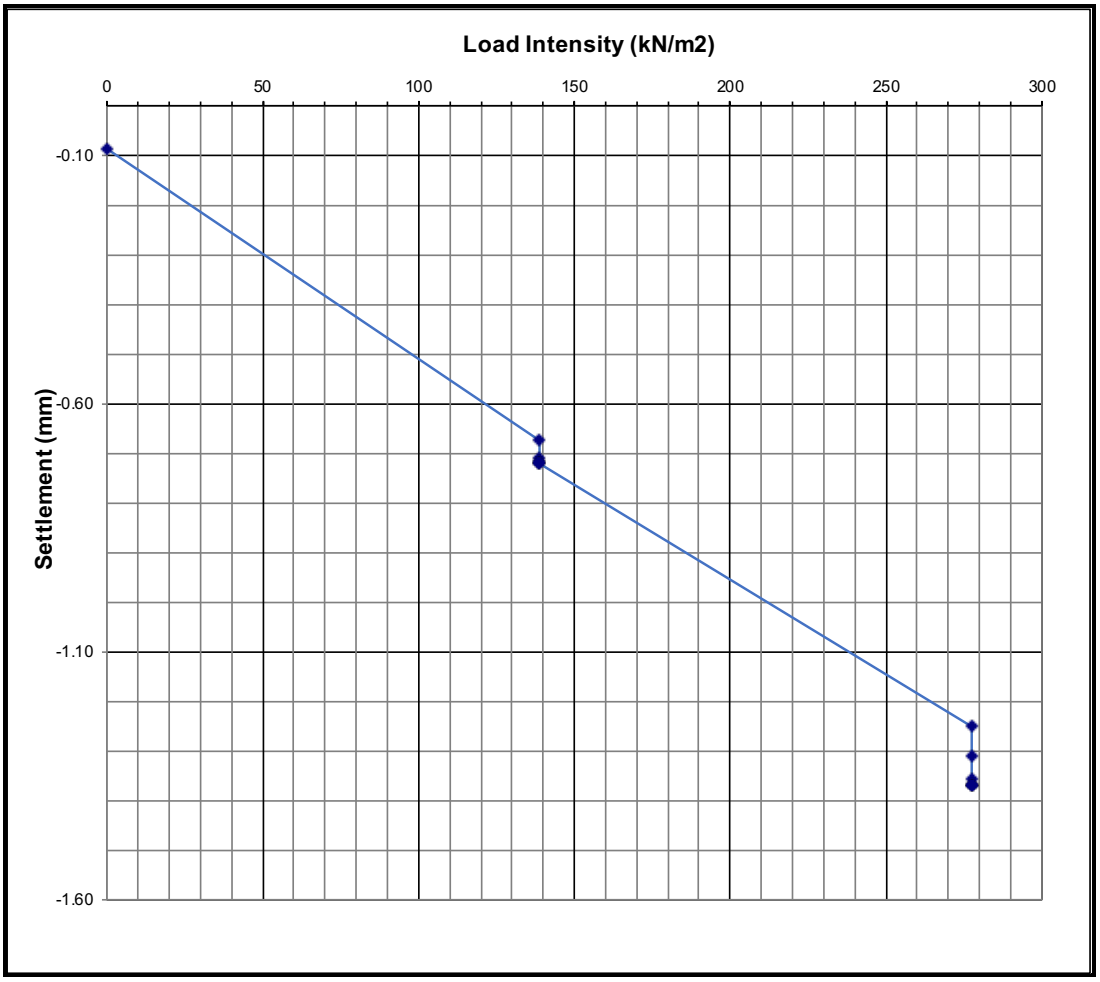
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	22/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	22/08/2018
Site Ref:	A11004	**Test Location:**	PL107
Plate Diameter (mm):	300	**Test No.:**	1
Test Depth (m bgl):	0.39		
Maximum Applied Pressure (kN/m2):	277	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	1.37	**Strata Description:**	Granular



Equivalent CBR Value of 27.2%

Comments

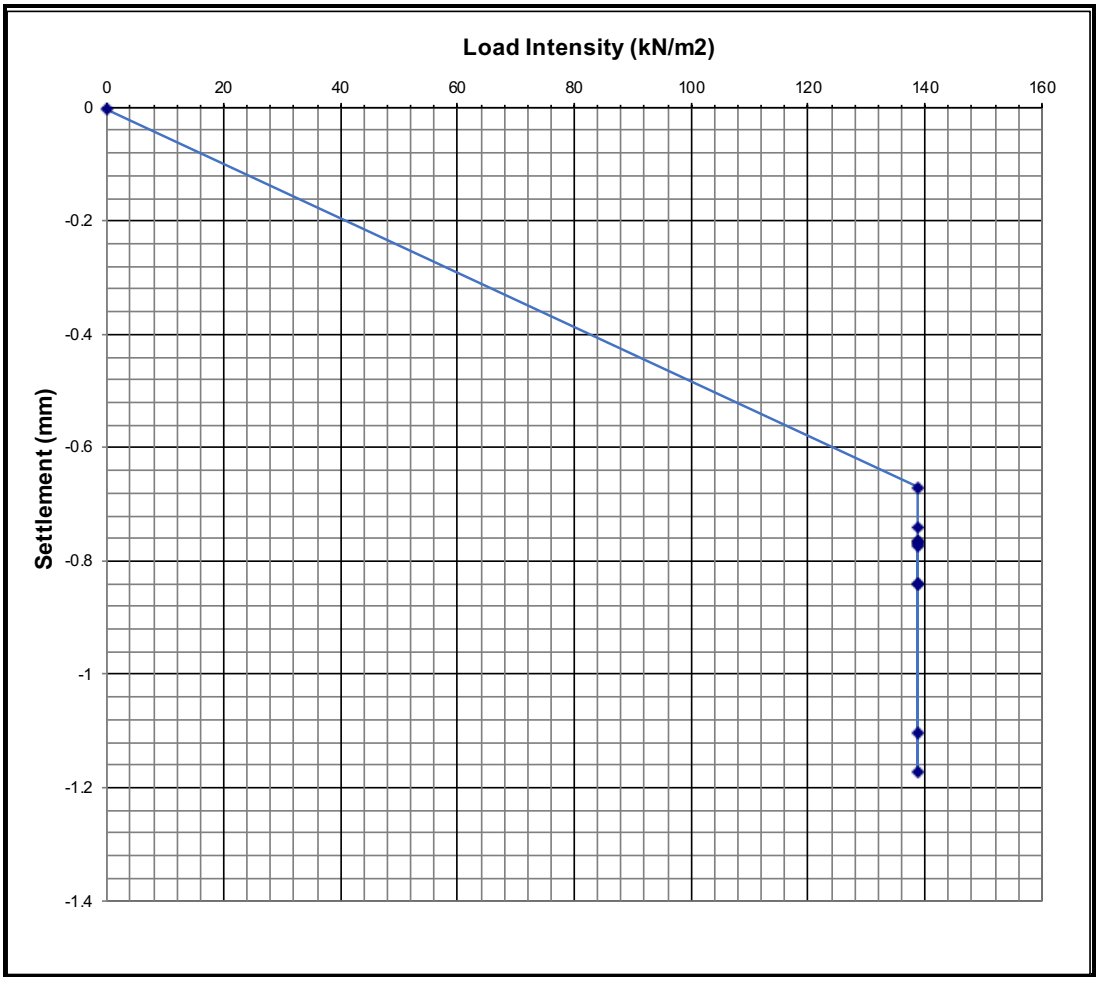
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	22/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	22/08/2018
Site Ref:	A11004	**Test Location:**	PL108
Plate Diameter (mm):	300	**Test No.:**	1
Test Depth (m bgl):	0.40		
Maximum Applied Pressure (kN/m2):	139	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	1.17	**Strata Description:**	Granular



Test Unsuccessful

Comments

The test did not reach 1.25mm settlement and therefore a CBR value cannot be calculated.

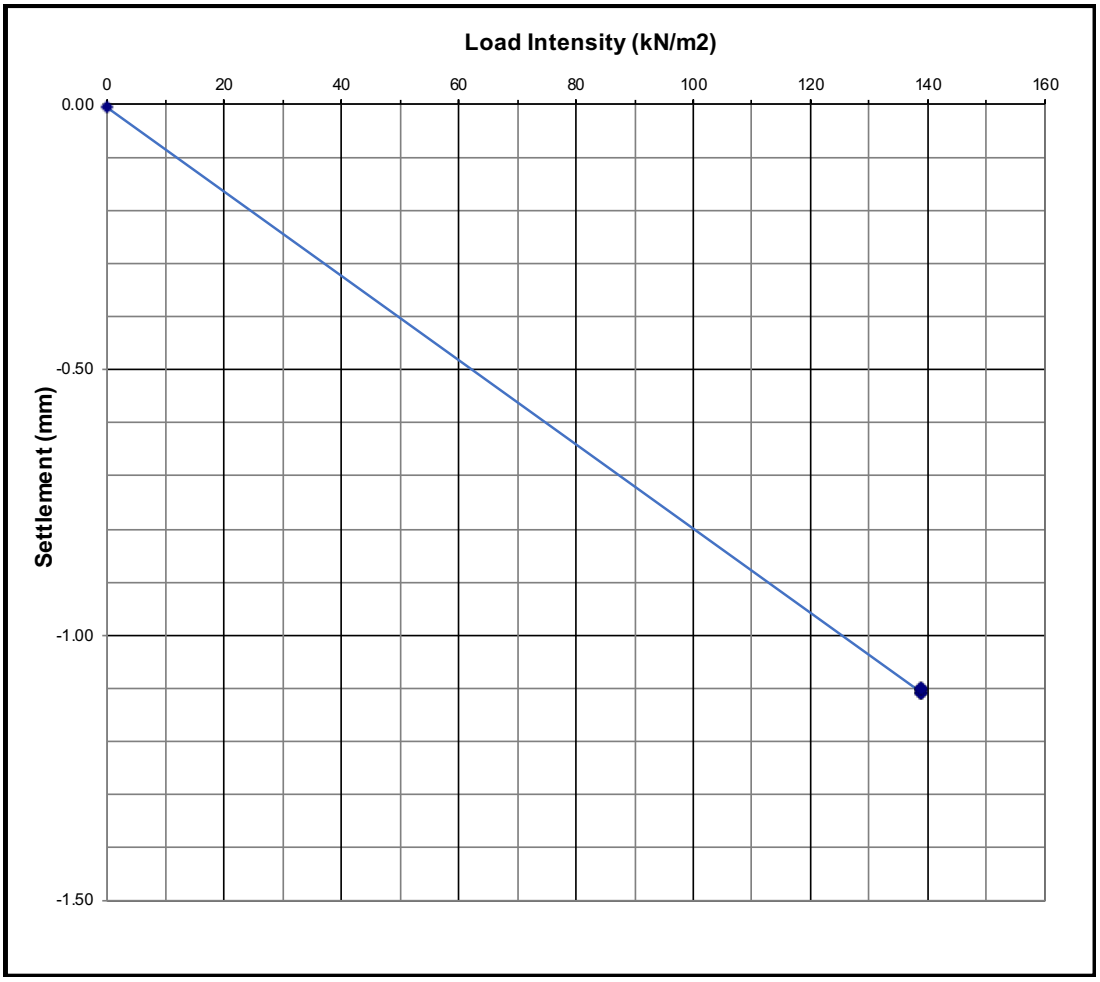
Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	22/08/2018	A.King	27/09/2018

OMNIA
ENVIRONMENTAL CONSULTING

Vertical Deformation Test - Equivalent CBR Value (%)

In Accordance with BS1377: Part 9:1990

Site Name:	Amesbury 299	**Test Date:**	22/08/2018
Site Ref:	A11004	**Test Location:**	PLT09
Plate Diameter (mm):	300	**Test No.:**	1
Test Depth (m bgl):	0.00		
Maximum Applied Pressure (kN/m2):	139	**Undertaken By:**	G.Larcombe
Maximum Deformation (mm):	1.11	**Strata Description:**	Granular



Test Unsuccessful

Comments

The test did not reach 1.25mm settlement and therefore a CBR value cannot be calculated.

Site Engineer:	Date:	Checked and Approved By:	Date:
G.Larcombe	22/08/2018	A.King	27/09/2018

APPENDIX X

IN-SITU SOIL INFILTRATION RATE TEST CERTIFICATES

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA101
Trial Pit Length (m):	1.70
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.30
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly medium to coarse SAND with clods of friable clay. Gravel of angular to subrounded fine to coarse flint and chalk.

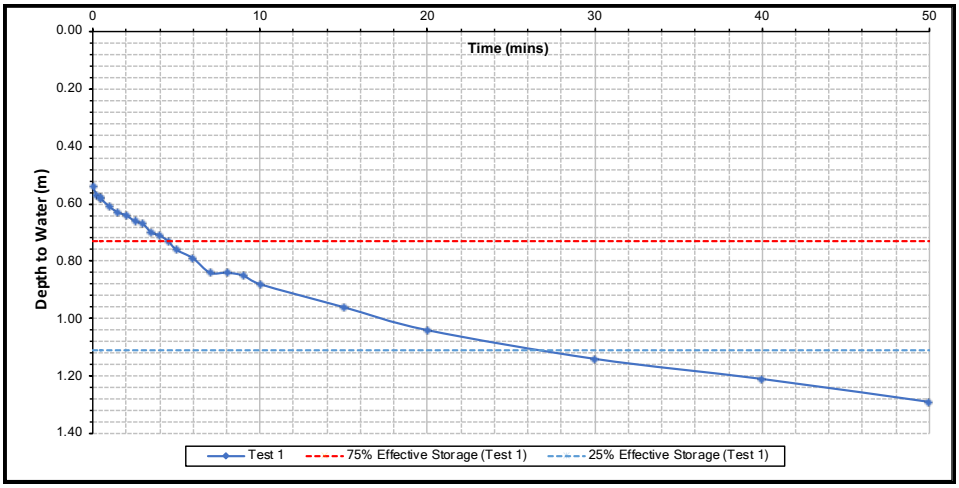
0.20-1.30m bgl: Weak medium density with wblack specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.30m bgl

Test Parameters	TEST 1	
	Time (min)	Depth (m)
Effective Storage Depth (m):	0.00	0.54
0.76	0.25	0.57
75% Effective Storage Depth (m):	0.50	0.58
0.57	0.45	0.58
	1.00	0.61
(i.e. Depth Below Ground Level) (m):	1.50	0.63
0.73	2.00	0.64
	2.50	0.66
25% Effective Storage Depth (m):	3.00	0.67
0.19	3.50	0.70
	4.00	0.71
(i.e. Depth Below Ground Level) (m):	4.50	0.73
1.11	5.00	0.76
	6.00	0.79
Effective Storage Depth Across 75% - 25% (m):	7.00	0.84
0.38	8.00	0.84
	9.00	0.85
Time to Fall to 75% Effective Depth (min):	10.00	0.88
4.5	15.00	0.96
	20.00	1.04
Time to Fall to 25% Effective Depth (min):	30.00	1.14
27	40.00	1.21
	50.00	1.29
Vp75%-25% (m3):		
0.32		
As50% (m2):		
2.52		
Tp75%-25% (mins):		
22.5		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**9.49E-05**

Comments:



Site Engineer:	Date:
G.Larcombe	28/08/2018

Checked and Approved By:	Date:
A.King	27/09/2018

Location
SA101

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA101
Trial Pit Length (m):	1.70
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.30
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly medium to coarse SAND with clods of friable clay. Gravel of angular to subrounded fine to coarse flint and chalk.

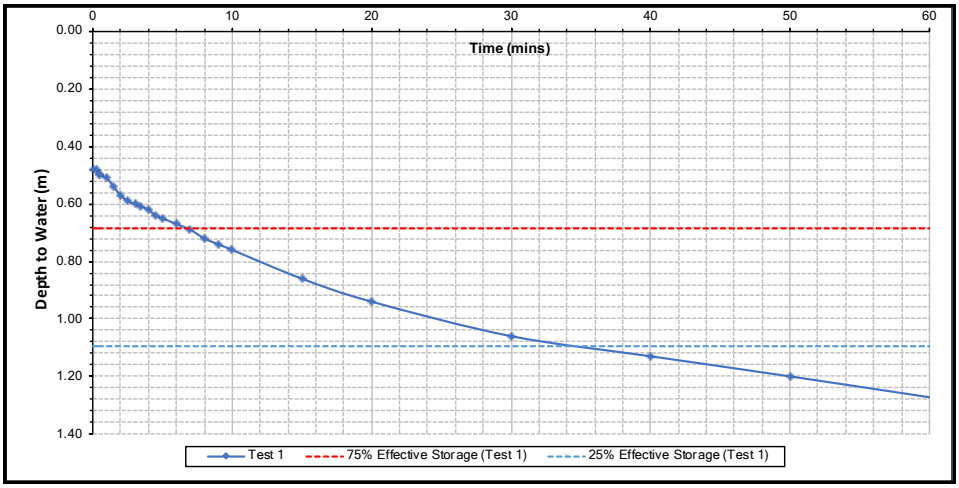
0.20-1.30m bgl: Weak medium density with wblack specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.30m bgl

Test Parameters	**TEST 2**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
0.82	0.00	0.48
	0.25	0.48
75% Effective Storage Depth (m):	0.50	0.50
0.62	0.45	0.50
	1.00	0.51
(i.e. Depth Below Ground Level) (m):	1.50	0.54
0.69	2.00	0.57
	2.50	0.59
25% Effective Storage Depth (m):	3.00	0.60
0.21	3.50	0.61
	4.00	0.62
(i.e. Depth Below Ground Level) (m):	4.50	0.64
1.10	5.00	0.65
	6.00	0.67
Effective Storage Depth Across 75% - 25% (m):	7.00	0.69
0.41	8.00	0.72
	9.00	0.74
Time to Fall to 75% Effective Depth (min):	10.00	0.76
7.00	15.00	0.86
	20.00	0.94
Time to Fall to 25% Effective Depth (min):	30.00	1.06
35.00	40.00	1.13
	50.00	1.20
Vp75%-25% (m3):	61.00	1.28
0.35		
As50% (m2):		
2.65		
Tp75%-25% (mins):		
28.00		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**7.82E-05**

Comments:



Site Engineer:	**Date:**
G.Larcombe	28/08/2018

Checked and Approved By:	**Date:**
A.King	27/09/2018

Location
SA101

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA101
Trial Pit Length (m):	1.70
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.30
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly medium to coarse SAND with clods of friable clay. Gravel of angular to subrounded fine to coarse flint and chalk.

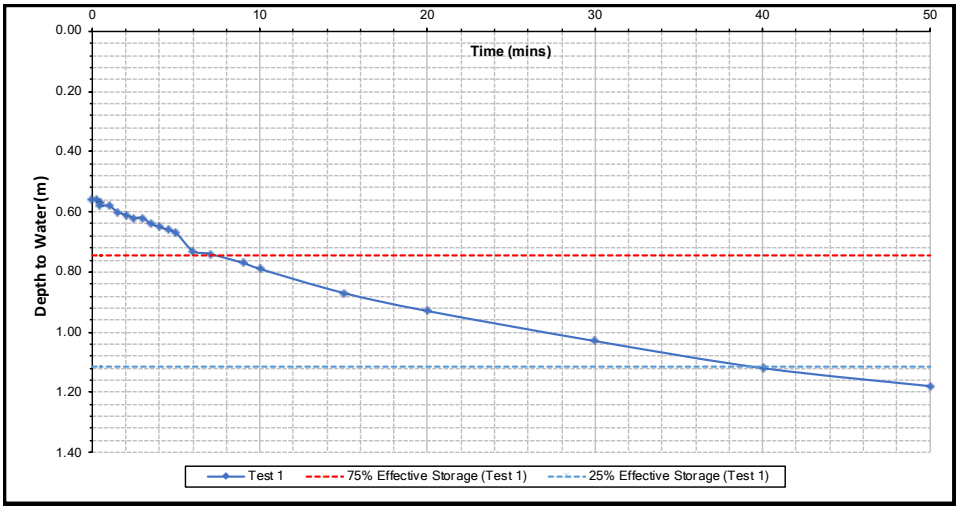
0.20-1.30m bgl: Weak medium density with wblack specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.30m bgl

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
0.74	0.00	0.56
	0.25	0.56
75% Effective Storage Depth (m):	0.50	0.57
0.56	0.45	0.58
	1.00	0.58
(i.e. Depth Below Ground Level) (m):	1.50	0.60
0.75	2.00	0.61
	2.50	0.62
25% Effective Storage Depth (m):	3.00	0.62
0.19	3.50	0.64
	4.00	0.65
(i.e. Depth Below Ground Level) (m):	4.50	0.66
1.12	5.00	0.67
	6.00	0.73
Effective Storage Depth Across 75% - 25% (m):	7.00	0.74
0.37	9.00	0.77
	10.00	0.79
Time to Fall to 75% Effective Depth (min):	15.00	0.87
7	20.00	0.93
	30.00	1.03
Time to Fall to 25% Effective Depth (min):	40.00	1.12
39	50.00	1.18
Vp75%-25% (m3):		
0.31		
As50% (m2):		
2.478		
Tp75%-25% (mins):		
32		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**6.61E-05**

Comments:



Site Engineer:	**Date:**
G.Larcombe	28/08/2018

Checked and Approved By:	**Date:**
A.King	27/09/2018

Location
SA101

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA102
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.60
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly medium to coarse SAND with clods of friable clay. Gravel of angular to subrounded fine to coarse flint and chalk.

0.20-0.30mbgl: Pale brown angualr to subronded fine to coarse GRAVEL of flint.

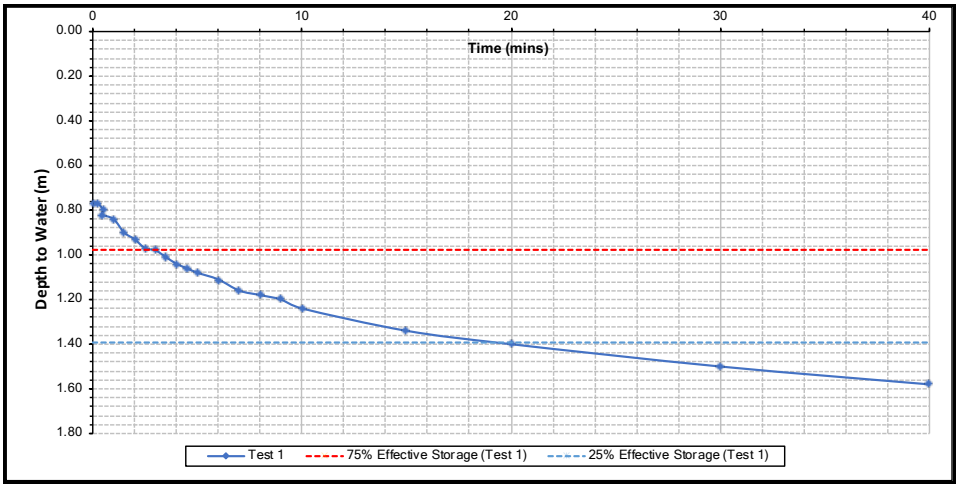
0.30-1.30m bgl: Weak medium density with wblack specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.60m bgl

Test Parameters	**TEST 1**	
	Time (min)	**Depth (m)**
Effective Storage Depth (m):	0.00	0.77
0.83	0.25	0.77
75% Effective Storage Depth (m):	0.50	0.80
0.62	0.45	0.82
	1.00	0.84
(i.e. Depth Below Ground Level) (m):	1.50	0.90
0.98	2.00	0.93
	2.50	0.97
25% Effective Storage Depth (m):	3.00	0.98
0.21	3.50	1.01
	4.00	1.04
(i.e. Depth Below Ground Level) (m):	4.50	1.06
1.39	5.00	1.08
	6.00	1.11
Effective Storage Depth Across 75% - 25% (m):	7.00	1.16
0.42	8.00	1.18
	9.00	1.20
Time to Fall to 75% Effective Depth (min):	10.00	1.24
3	15.00	1.34
	20.00	1.40
Time to Fall to 25% Effective Depth (min):	30.00	1.50
20	40.00	1.58
Vp75%-25% (m3):		
0.37		
As50% (m2):		
2.81		
Tp75%-25% (mins):		
17		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.30E-04**

Comments:



Site Engineer:	**Date:**
G.Larcombe	28/08/2018

Checked and Approved By:	**Date:**
A.King	27/09/2018

Location
SA102

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA102
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.60
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly medium to coarse SAND with clods of friable clay. Gravel of angular to subrounded fine to coarse flint and chalk.

0.20-0.30mbgl: Pale brown angualr to subronded fine to coarse GRAVEL of flint.

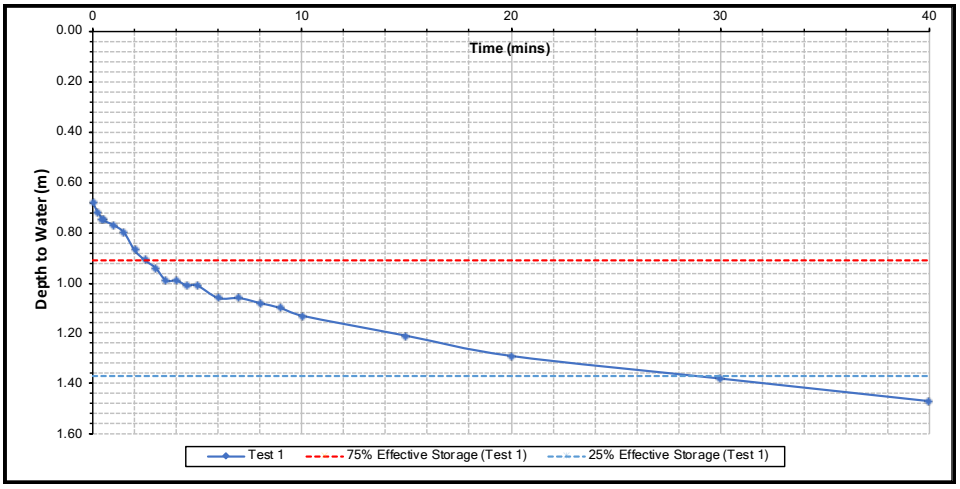
0.30-1.30m bgl: Weak medium density with wblack specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.60m bgl

Test Parameters	**TEST 2**	
	Time (min)	**Depth (m)**
Effective Storage Depth (m):	0.00	0.68
0.92	0.25	0.72
75% Effective Storage Depth (m):	0.50	0.75
0.69	0.45	0.75
	1.00	0.77
(i.e. Depth Below Ground Level) (m):	1.50	0.80
0.91	2.00	0.87
	2.50	0.91
25% Effective Storage Depth (m):	3.00	0.94
0.23	3.50	0.99
	4.00	0.99
(i.e. Depth Below Ground Level) (m):	4.50	1.01
1.37	5.00	1.01
	6.00	1.06
Effective Storage Depth Across 75% - 25% (m):	7.00	1.06
0.46	8.00	1.08
	9.00	1.10
Time to Fall to 75% Effective Depth (min):	10.00	1.13
2.50	15.00	1.21
	20.00	1.29
Time to Fall to 25% Effective Depth (min):	30.00	1.38
29.00	40.00	1.47
Vp75%-25% (m3):		
0.41		
As50% (m2):		
3.02		
Tp75%-25% (mins):		
26.50		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**8.63E-05**

Comments:



Site Engineer:	**Date:**
G.Larcombe	28/08/2018

Checked and Approved By:	**Date:**
A.King	27/09/2018

Location
SA102

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA102
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.60
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly medium to coarse SAND with clods of friable clay. Gravel of angular to subrounded fine to coarse flint and chalk.

0.20-0.30mbgl: Pale brown angualr to subronded fine to coarse GRAVEL of flint.

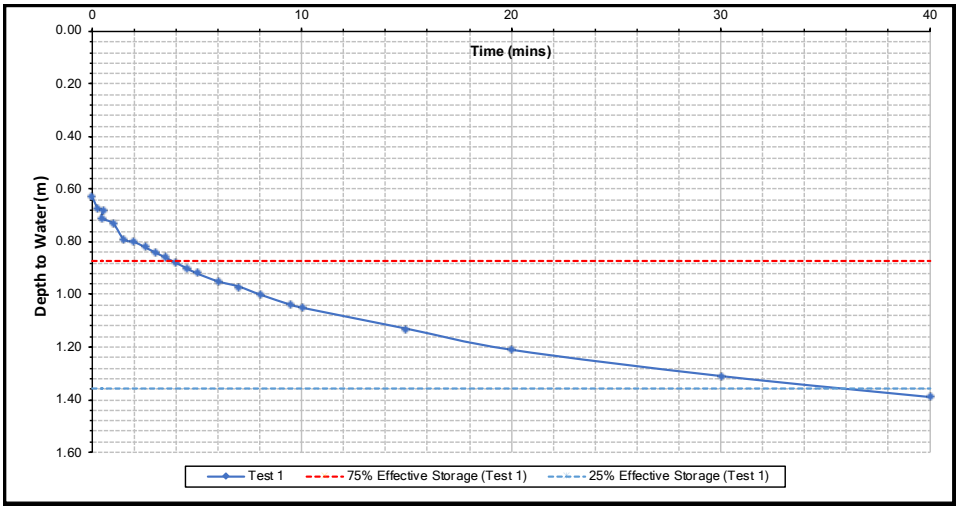
0.30-1.30m bgl: Weak medium density with wblack specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.60m bgl

Test Parameters	**TEST 3**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
0.97	0.00	0.63
	0.25	0.67
75% Effective Storage Depth (m):	0.50	0.68
0.73	0.45	0.71
	1.00	0.73
(i.e. Depth Below Ground Level) (m):	1.50	0.79
0.87	2.00	0.80
	2.50	0.82
25% Effective Storage Depth (m):	3.00	0.84
0.24	3.50	0.86
	4.00	0.88
(i.e. Depth Below Ground Level) (m):	4.50	0.90
1.36	5.00	0.92
	6.00	0.95
Effective Storage Depth Across 75% - 25% (m):	7.00	0.97
0.485	8.00	1.00
	9.50	1.04
Time to Fall to 75% Effective Depth (min):	10.00	1.05
4	15.00	1.13
	20.00	1.21
Time to Fall to 25% Effective Depth (min):	30.00	1.31
37	40.00	1.39
Vp75%-25% (m3):		
0.44		
As50% (m2):		
3.131		
Tp75%-25% (mins):		
33		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**7.04E-05**

Comments:



Site Engineer:	**Date:**
G.Larcombe	28/08/2018

Checked and Approved By:	**Date:**
A.King	27/09/2018

Location
SA102

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA103
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.63
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl:Grass cover over brown angular to subrounded fine to coarse sandy GRAVEL of flint and chalk.

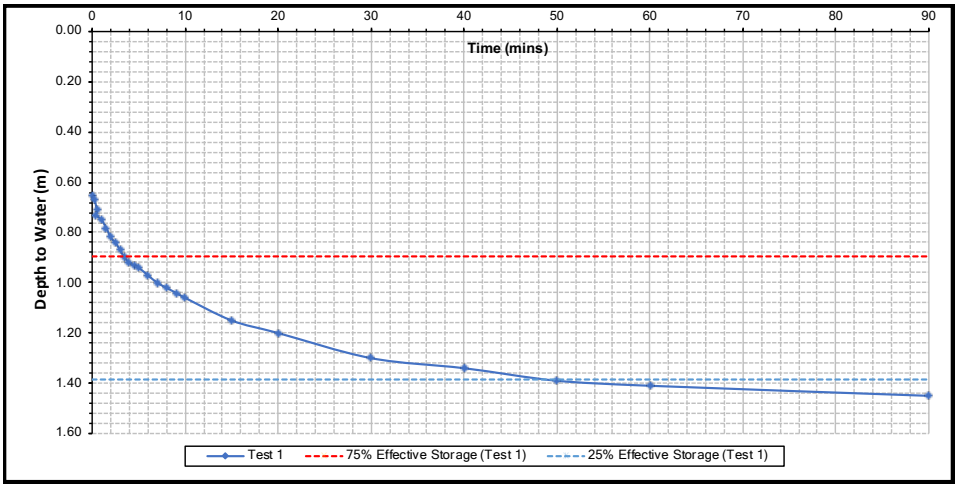
0.20-1.63m bgl: Weak medium density with black specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.63m bgl

Test Parameters	TEST 1	
	Time (min)	Depth (m)
Effective Storage Depth (m):	0.00	0.65
0.98	0.25	0.67
75% Effective Storage Depth (m):	0.50	0.71
0.74	0.45	0.73
	1.00	0.75
(i.e. Depth Below Ground Level) (m):	1.50	0.78
0.90	2.00	0.82
	2.50	0.84
25% Effective Storage Depth (m):	3.00	0.87
0.25	3.50	0.90
	4.00	0.92
(i.e. Depth Below Ground Level) (m):	4.50	0.93
1.39	5.00	0.94
	6.00	0.97
Effective Storage Depth Across 75% - 25% (m):	7.00	1.00
0.49	8.00	1.02
	9.00	1.04
Time to Fall to 75% Effective Depth (min):	10.00	1.06
3.5	15.00	1.15
	20.00	1.20
Time to Fall to 25% Effective Depth (min):	30.00	1.30
50	40.00	1.34
	50.00	1.39
Vp75%-25% (m3):	60.00	1.41
0.44	90.00	1.45
As50% (m2):		
3.15		
Tp75%-25% (mins):		
46.5		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**5.01E-05**

Comments:



Site Engineer:	Date:
G.Larcombe	28/08/2018

Checked and Approved By:	Date:
A.King	27/09/2018

Location
SA103

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA103
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.63
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl:Grass cover over brown angular to subrounded fine to coarse sandy GRAVEL of flint and chalk.

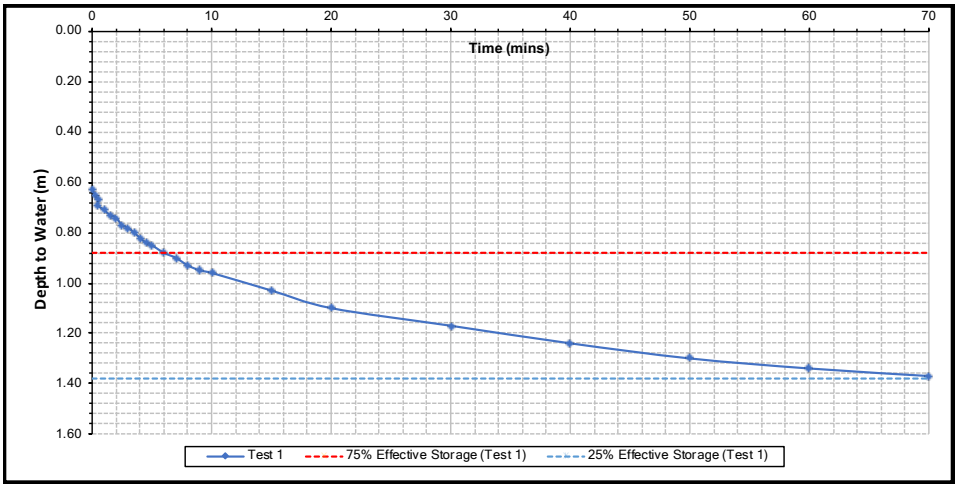
0.20-1.63m bgl: Weak medium density with black specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.63m bgl

Test Parameters	TEST 2	
	Time (min)	Depth (m)
Effective Storage Depth (m):	0.00	0.63
1.00	0.25	0.65
75% Effective Storage Depth (m):	0.50	0.67
0.75	0.45	0.69
	1.00	0.71
(i.e. Depth Below Ground Level) (m):	1.50	0.73
0.88	2.00	0.74
	2.50	0.77
25% Effective Storage Depth (m):	3.00	0.78
0.25	3.50	0.80
	4.00	0.82
(i.e. Depth Below Ground Level) (m):	4.50	0.84
1.38	5.00	0.85
	6.00	0.88
Effective Storage Depth Across 75% - 25% (m):	7.00	0.90
0.50	8.00	0.93
	9.00	0.95
Time to Fall to 75% Effective Depth (min):	10.00	0.96
6.00	15.00	1.03
	20.00	1.10
Time to Fall to 25% Effective Depth (min):	30.00	1.17
72.00	40.00	1.24
	50.00	1.30
Vp75%-25% (m3):	60.00	1.34
0.45	70.00	1.37
As50% (m2):		
3.20		
Tp75%-25% (mins):		
66.00		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**3.55E-05**

Comments:



Site Engineer:	Date:
G.Larcombe	28/08/2018

Checked and Approved By:	Date:
A.King	27/09/2018

Location
SA103

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA103
Trial Pit Length (m):	1.80
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	1.63
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl:Grass cover over brown angular to subrounded fine to coarse sandy GRAVEL of flint and chalk.

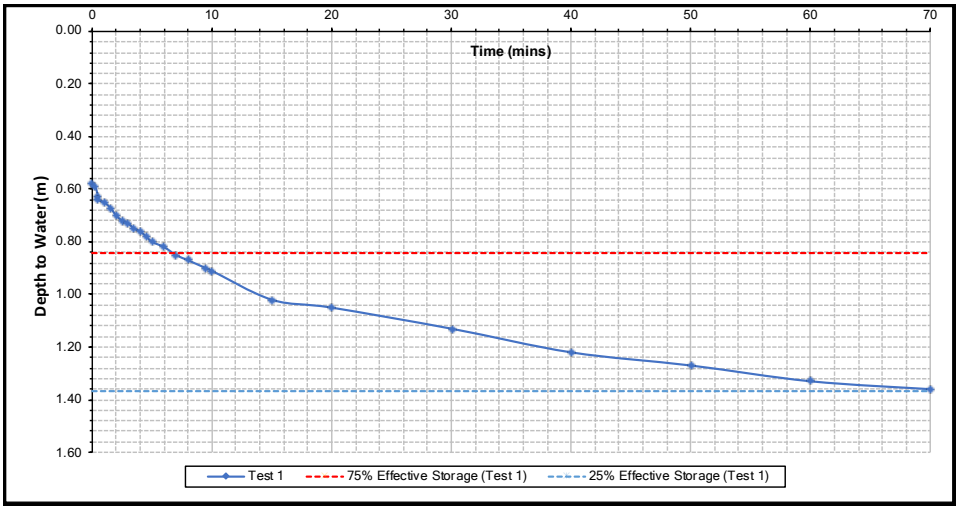
0.20-1.63m bgl: Weak medium density with black specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 1.63m bgl

Test Parameters	TEST 3	
	Time (min)	Depth (m)
Effective Storage Depth (m):	0.00	0.58
1.05	0.25	0.59
75% Effective Storage Depth (m):	0.50	0.63
0.79	0.45	0.64
	1.00	0.65
(i.e. Depth Below Ground Level) (m):	1.50	0.67
0.84	2.00	0.70
	2.50	0.72
25% Effective Storage Depth (m):	3.00	0.73
0.26	3.50	0.75
	4.00	0.76
(i.e. Depth Below Ground Level) (m):	4.50	0.78
1.37	5.00	0.80
	6.00	0.82
Effective Storage Depth Across 75% - 25% (m):	7.00	0.85
0.525	8.00	0.87
	9.50	0.90
Time to Fall to 75% Effective Depth (min):	10.00	0.91
7	15.00	1.02
	20.00	1.05
Time to Fall to 25% Effective Depth (min):	30.00	1.13
72	40.00	1.22
	50.00	1.27
Vp75%-25% (m3):	60.00	1.33
0.47	70.00	1.36
As50% (m2):		
3.315		
Tp75%-25% (mins):		
65		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**3.65E-05**

Comments:



Site Engineer:	Date:
G.Larcombe	28/08/2018

Checked and Approved By:	Date:
A.King	27/09/2018

Location
SA103

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA104
Trial Pit Length (m):	1.95
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.00
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly fine to medium SAND. Gravel of angular to subrounded fine to coarse flint.

0.20-1.10m bgl: Light brown angular to subrounded fine to coarse sandy GRAVEL of flint, brick, plastic, aspahlt, cobble sized brick and concrete, paving slab and wood.

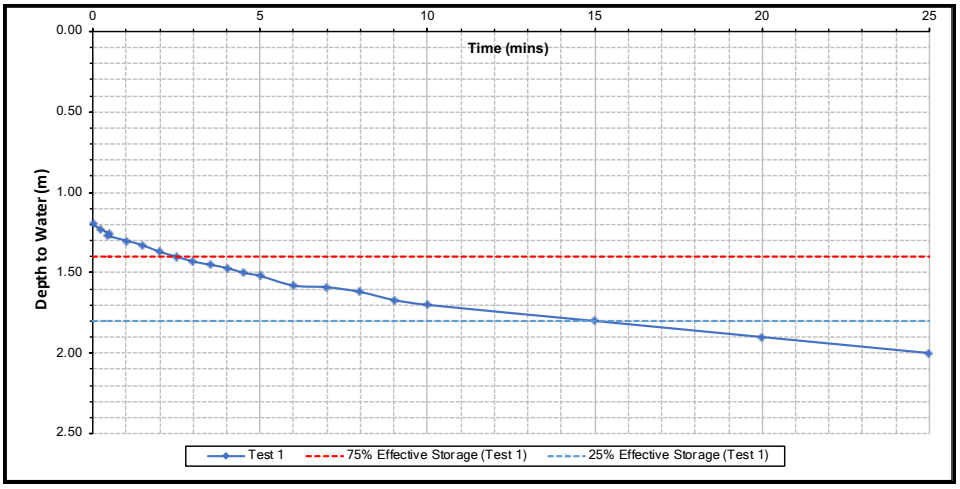
1.10-2.00m bgl: Weak medium density with black specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 2.00m bgl

Test Parameters	**TEST 1**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
0.80	0.00	1.20
	0.25	1.23
75% Effective Storage Depth (m):	0.50	1.26
0.60	0.45	1.27
	1.00	1.30
(i.e. Depth Below Ground Level) (m):	1.50	1.33
1.40	2.00	1.37
	2.50	1.40
25% Effective Storage Depth (m):	3.00	1.43
0.20	3.50	1.45
	4.00	1.47
(i.e. Depth Below Ground Level) (m):	4.50	1.50
1.80	5.00	1.52
	6.00	1.58
Effective Storage Depth Across 75% - 25% (m):	7.00	1.59
0.40	8.00	1.62
	9.00	1.67
Time to Fall to 75% Effective Depth (min):	10.00	1.70
2.5	15.00	1.80
	20.00	1.90
Time to Fall to 25% Effective Depth (min):	25.00	2.00
15		
Vp75%-25% (m3):		
0.39		
As50% (m2):		
2.94		
Tp75%-25% (mins):		
12.5		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.77E-04**

Comments:



Site Engineer:	**Date:**
G.Larcombe	28/08/2018

Checked and Approved By:	**Date:**
A.King	27/09/2018

Location
SA104

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA104
Trial Pit Length (m):	1.95
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.00
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly fine to medium SAND. Gravel of angular to subrounded fine to coarse flint.

0.20-1.10m bgl: Light brown angular to subrounded fine to coarse sandy GRAVEL of flint, brick, plastic, aspahlt, cobble sized brick and concrete, paving slab and wood.

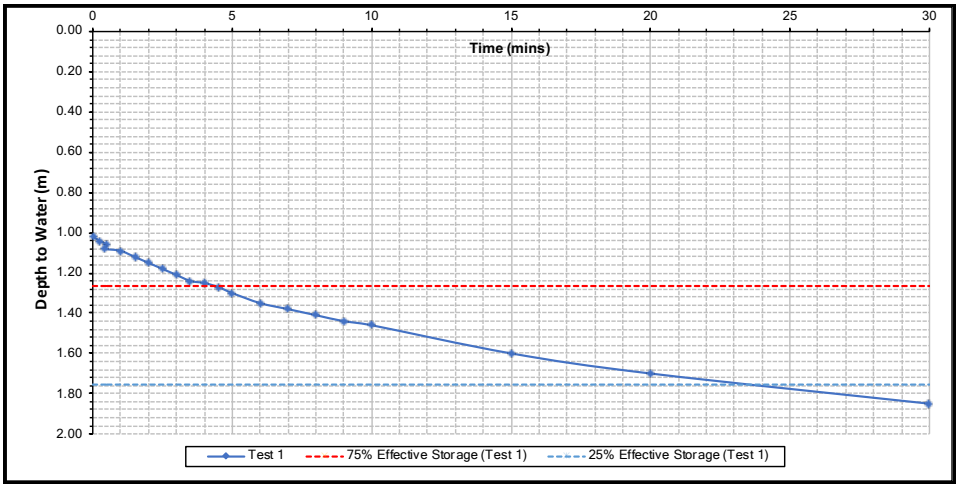
1.10-2.00m bgl: Weak medium density with black specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 2.00m bgl

Test Parameters	**TEST 2**	
Effective Storage Depth (m):	**Time (min)**	**Depth (m)**
0.98	0.00	1.02
	0.25	1.04
75% Effective Storage Depth (m):	0.50	1.06
0.74	0.45	1.08
	1.00	1.09
(i.e. Depth Below Ground Level) (m):	1.50	1.12
1.27	2.00	1.15
	2.50	1.18
25% Effective Storage Depth (m):	3.00	1.21
0.25	3.50	1.24
	4.00	1.25
(i.e. Depth Below Ground Level) (m):	4.50	1.27
1.76	5.00	1.30
	6.00	1.35
Effective Storage Depth Across 75% - 25% (m):	7.00	1.38
0.49	8.00	1.41
	9.00	1.44
Time to Fall to 75% Effective Depth (min):	10.00	1.46
4.50	15.00	1.60
	20.00	1.70
Time to Fall to 25% Effective Depth (min):	30.00	1.85
23.50		
Vp75%-25% (m3):		
0.48		
As50% (m2):		
3.38		
Tp75%-25% (mins):		
19.00		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**1.24E-04**

Comments:



Site Engineer:	**Date:**
G.Larcombe	28/08/2018

Checked and Approved By:	**Date:**
A.King	27/09/2018

Location
SA104

Site Name:	Amesbury 299
Site Reference:	A11004
Test Date:	28/08/2018

Trial Pit Identification:	SA104
Trial Pit Length (m):	1.95
Trial Pit Width (m):	0.50
Trial Pit Depth (m):	2.00
Groundwater Level (m bgl):	N/A

OMNIA
ENVIRONMENTAL CONSULTING

SOIL INFILTRATION RATE TEST
See BRE DG365, Soakaway Design (2016).

Geology Description:

GL-0.20m bgl: Grass cover over brown gravelly fine to medium SAND. Gravel of angular to subrounded fine to coarse flint.

0.20-1.10m bgl: Light brown angular to subrounded fine to coarse sandy GRAVEL of flint, brick, plastic, aspahlt, cobble sized brick and concrete, paving slab and wood.

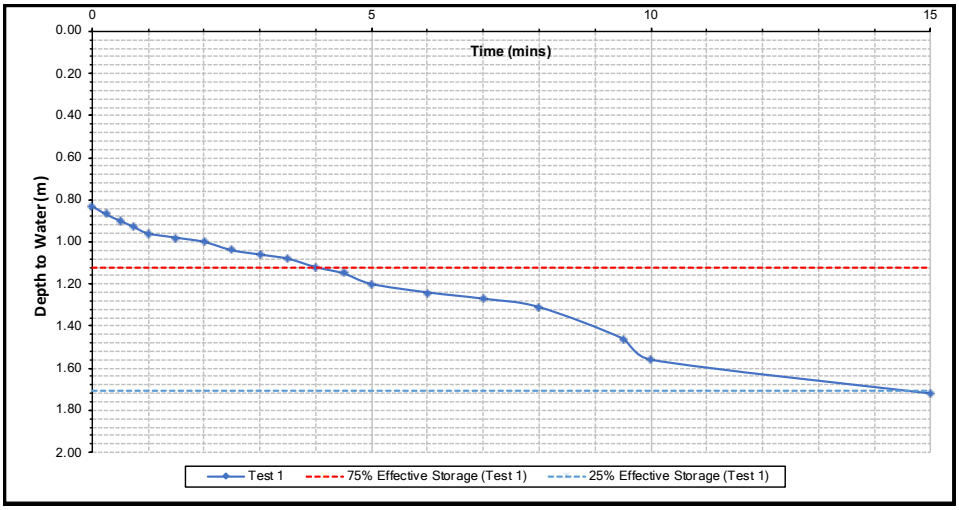
1.10-2.00m bgl: Weak medium density with black specks CHALK. Fractures closely spaced open and generally infilled with uncompact light creamish white silt-size communicated chalk. Angular to subangular grey flint bands present.

EOH @ 2.00m bgl

Test Parameters	**TEST 3**	
	Time (min)	**Depth (m)**
Effective Storage Depth (m):	0.00	0.83
1.17	0.25	0.87
75% Effective Storage Depth (m):	0.50	0.90
0.88	0.75	0.93
	1.00	0.96
(i.e. Depth Below Ground Level) (m):	1.50	0.98
1.12	2.00	1.00
	2.50	1.04
25% Effective Storage Depth (m):	3.00	1.06
0.29	3.50	1.08
	4.00	1.12
(i.e. Depth Below Ground Level) (m):	4.50	1.15
1.71	5.00	1.20
	6.00	1.24
Effective Storage Depth Across 75% - 25% (m):	7.00	1.27
0.585	8.00	1.31
	9.50	1.46
Time to Fall to 75% Effective Depth (min):	10.00	1.56
4	15.00	1.72
Time to Fall to 25% Effective Depth (min):		
14.5		
Vp75%-25% (m3):		
0.57		
As50% (m2):		
3.8415		
Tp75%-25% (mins):		
10.5		

DESIGN SOIL INFILTRATION RATE, f (m/s):	**2.36E-04**

Comments:



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Location
SA104