

wardell-armstrong.com

ENERGY AND CLIMATE CHANGE  
ENVIRONMENT AND SUSTAINABILITY  
INFRASTRUCTURE AND UTILITIES  
LAND AND PROPERTY  
MINING AND MINERAL PROCESSING  
MINERAL ESTATES  
WASTE RESOURCE MANAGEMENT



**BDW SOUTHAMPTON**

**PROPOSED DEVELOPMENT ON LAND OFF ST GEORGE'S AVENUE, HAVANT**

**MINERAL RESOURCE ASSESSMENT**

**JUNE 2021**

**DATE ISSUED:** June 2021  
**JOB NUMBER:** ST18915  
**REPORT NUMBER:** 001  
**VERSION:** V1.0  
**STATUS:** Final

**BDW SOUTHAMPTON**

**PROPOSED DEVELOPMENT ON LAND OFF ST GEORGE'S AVENUE, HAVANT**

**MINERAL RESOURCE ASSESSMENT**

**JUNE 2021**

**PREPARED AND  
APPROVED BY:**

Stephen Barry

Technical Director and  
Chartered Mineral  
Surveyor



*This report has been prepared by Wardell Armstrong LLP with all reasonable skill, care and diligence, within the terms of the Contract with the Client. The report is confidential to the Client and Wardell Armstrong LLP accepts no responsibility of whatever nature to third parties to whom this report may be made known.*

*No part of this document may be reproduced without the prior written approval of Wardell Armstrong LLP.*



Wardell Armstrong is the trading name of Wardell Armstrong LLP, Registered in England No. OC307138.

Registered office: Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom

UK Offices: Stoke-on-Trent, Birmingham, Bolton, Bristol, Bury St Edmunds, Cardiff, Carlisle, Edinburgh, Glasgow, Leeds, London, Newcastle upon Tyne and Truro. International Offices: Almaty and Moscow.

ENERGY AND CLIMATE CHANGE  
ENVIRONMENT AND SUSTAINABILITY  
INFRASTRUCTURE AND UTILITIES  
LAND AND PROPERTY  
MINING AND MINERAL PROCESSING  
MINERAL ESTATES  
WASTE RESOURCE MANAGEMENT

## **CONTENTS**

|                                     |   |
|-------------------------------------|---|
| EXECUTIVE SUMMARY .....             | 1 |
| 1 INTRODUCTION .....                | 2 |
| 2 GEOLOGY .....                     | 2 |
| 3 MINERAL SAFEGUARDING POLICY ..... | 2 |
| 4 CONCLUSIONS .....                 | 4 |

## **APPENDICES**

**Appendix 1:** Borehole logs

**Appendix 2:** Policy 15: Safeguarding mineral resources

**Appendix 3:** Water level monitoring borehole results

## **DRAWINGS**

ST18915-001 Superficial geology

## EXECUTIVE SUMMARY

This report has been prepared to support a planning application by BDW Southampton for proposed development on land off St George's Avenue, Havant, which is located approximately 1.6 km east of Havant town centre. The site has been reviewed in relation to the mineral safeguarding policies of Hampshire County Council's Minerals and Waste Plan.

The site comprises approximately 5 ha of agricultural land. Published geological maps for the area indicate that the entire site is covered by a river terrace sand and gravel deposit, which is a safeguarded mineral resource. The solid geology on the site comprises the London Clay formation which is not a safeguarded mineral resource.

The quantity of sand and gravel on the site is too small to be of any commercial value and the minerals will be indirectly sterilised by the proposed residential development directly adjoining the site's western boundary. The level of groundwater is 1 to 3 metres below ground level so total mineral extraction would result in a lake and the proposed development could not be built.

The mineral safeguarding policy states that development without the prior extraction of mineral resources may be permitted if, *inter alia*, it would be inappropriate to extract mineral resources at that location or the merits of the proposed development outweigh the safeguarding of the mineral. We consider that this site meets both those criteria so prior extraction is not required.

## **1 INTRODUCTION**

- 1.1 This report has been prepared in accordance with instructions from BDW Southampton to prepare a Mineral Resource Assessment report in support of a planning application for residential development on land off St Georges Avenue, Havant. The site boundary is shown edged red on the attached drawing ST18915-001, which also shows the superficial geology on the site. The site comprises approximately 5 ha of agricultural land. The site is bounded by a railway line to the north, the A27 to the east and south, and agricultural land with planning permission for 69 dwellings to the west.

## **2 GEOLOGY**

- 2.1 Geologically, a distinction is made between “superficial deposits” and “solid geology”. Superficial deposits such as sand and gravel are found at, or close to, the surface. The solid bedrock beneath the superficial deposits is called the “solid geology”.

### **Superficial geology**

- 2.2 The British Geological Survey (BGS) online geological map at 1:50,000 scale shows that the entire site is covered by a river terrace sand and gravel deposit, which is a safeguarded mineral resource. There is one borehole within the site boundary and seven boreholes within 100m of the site boundary. Borehole log SU70NW/198, which is attached at **Appendix 1**, is located on the north western corner of the proposed development site and shows that the site is underlain by approximately 1m of clay overburden and approximately 2-3m of clayey gravel with a silty fine sand. The surrounding seven boreholes all recorded similar geological sequences and are also attached at **Appendix 1**.

### **Solid geology**

- 2.3 The BGS online map at 1:50,000 scale indicates that the entire site is underlain by the London Clay Formation, which is not a safeguarded mineral resource.

## **3 MINERAL SAFEGUARDING POLICY**

- 3.1 The relevant mineral planning policies are set out in the Minerals and Waste Plan for Hampshire which was adopted in October 2013 and is due for review by 2030. The Minerals and Waste Plan was jointly developed by Hampshire County Council,

Portsmouth City Council, Southampton City Council, the New Forest National Park Authority and the South Downs National Park Authority. The Hampshire authorities have set out policies that enable the delivery of sustainable mineral and waste development.

*"Policy 15: Safeguarding - Mineral Resources", which is attached in full at **Appendix 2**, states that "Development without prior extraction of mineral resources in the Mineral Safeguarding Area may be permitted if:*

- a) It can be demonstrated that the sterilisation of the mineral resources will not occur; or*
- b) It would be inappropriate to extract mineral resources at that location, with regards to the other policies in the Plan; or*
- c) The development would not pose a serious hindrance to mineral development in the vicinity; or*
- d) The merits of the development outweigh the safeguarding of the mineral."*

#### **Compliance with the adopted safeguarding policy**

##### *Criterion b*

- 3.2 The proposed development site is located within a mineral safeguarding area for sand and gravel, and there is a river terrace sand and gravel deposit present on the site. The site is only 5 ha in area and is clearly too small for commercial mineral extraction to be undertaken. The sand and gravel deposit on the proposed development site is part of a larger deposit to the north but is isolated from it by the railway line on the site's northern boundary. The mineral deposit on the proposed development site is too small to be commercially viable so there is no realistic prospect that it would ever be worked.
- 3.3 Most of the sand and gravel on the site will be indirectly sterilised by the proposed residential development with planning permission directly adjoining the western boundary of the site. If the sand and gravel present on the site were to be worked, then a buffer zone of at least 100m from that development would be needed, which would cover 2.7 ha of the site and make the already small quantity of sand and gravel even smaller. In addition to those constraints, the site is within the urban envelope of Havant, so mineral extraction with the accompanying disturbance and impact of mineral processing would be completely inappropriate development in this setting.

These constraints mean that there is no realistic prospect that planning permission would be granted for mineral extraction on this site.

- 3.4 In addition to those constraints, groundwater was encountered at depths of 0.33 to 3m below the surface in the sand and gravel deposit, as identified in the onsite water level monitoring boreholes which are attached at **Appendix 3**. Any significant excavation of mineral would quickly encounter groundwater and create a lake, which would prevent the construction of the proposed housing development as it is not practicable to infill a flooded lake and then build on it. Consequently, the prior extraction of mineral would be inappropriate, given the nature of the proposed development. Limited partial extraction would yield an insignificant quantity of mineral and increase the risk of groundwater flooding in the long term.

## 4 CONCLUSIONS

- 4.1 The proposed development site is located within a mineral safeguarding area for sand and gravel, and there is a river terrace sand and gravel deposit present on the site. The site is approximately 5 ha in size and is clearly too small for mineral extraction to be undertaken. The sand and gravel deposit on the site is part of a larger deposit to the north but is separated from it by the railway line on the northern site boundary so it could not be worked as part of the larger deposit. Much of the mineral on the site will be indirectly sterilised by the proposed residential development directly adjoining the western boundary, which would require a 100m buffer zone. A buffer zone of that size would cover over half of the proposed development site, so mineral extraction would be inappropriate at this location having regard to the other policies in the Plan.
- 4.2 Furthermore, mineral extraction would result in a lake due to the high water table at 0.3m to 3m below ground level, which would prevent the land being used for any kind of built development in the future. Consequently, there is no realistic prospect that planning permission would be granted for mineral extraction on the site.
- 4.3 As a consequence of the small area of the site, the lack of space for a processing plant, the high groundwater levels, and the surrounding constraints, prior extraction is not practicable or environmentally feasible. It would be inappropriate to extract minerals at this location and the merits of the development outweigh the need for safeguarding. The site therefore meets the requirements of criteria b of the mineral

safeguarding Policy 15, so the proposed development would be acceptable in a Mineral Safeguarding Area.

## APPENDICES

## **Appendix 1: Borehole logs**

## BOREHOLE SECTION SHEET

SU 70 NW/198

7310 0646

BOREHOLE No. 3

CLIENT: Borough of Havant

DATE STARTED: 2.11.77

LOCATION: Denvilles Sewerage

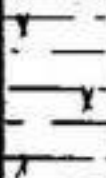
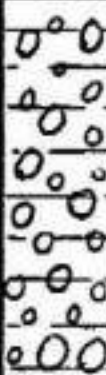
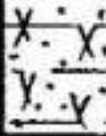
DATE FINISHED: 3.11.77

BH. DIAMETER: 6"

PLANT: P11con 1 ton

LEVEL A.O.D.: 11.90m

CASING SIZE: 6 1/2"

| Leg-<br>end                                                                                                                                                                                                                                                                            | Depth<br>below<br>G. L. | Elev.<br>A.O.D. | Thick-<br>ness | Description of Strata                                                      | Samples |        |                     | Water<br>Levels | Casing<br>Level |           |           |         |    |         |   |         |    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|-----------------|----------------|----------------------------------------------------------------------------|---------|--------|---------------------|-----------------|-----------------|-----------|-----------|---------|----|---------|---|---------|----|
|                                                                                                                                                                                                                                                                                        |                         |                 |                |                                                                            | No.     | Type   | Depth               |                 |                 |           |           |         |    |         |   |         |    |
|                                                                                                                                                                                                      | 0.34                    |                 | 0.34           | Topsoil.                                                                   |         |        |                     |                 |                 |           |           |         |    |         |   |         |    |
|                                                                                                                                                                                                     | 1.30                    |                 | 0.96           | Soft brown silty clay.                                                     | 1       | U4     | 1.0-1.5             |                 | BE              |           |           |         |    |         |   |         |    |
|                                                                                                                                                                                                     | 3.20                    |                 | 1.90           | Medium dense dark orange brown claybound flint gravel.                     | 2       | B      | (no rec)<br>2.3-2.5 | 3.20<br>▽       | Ch              |           |           |         |    |         |   |         |    |
|                                                                                                                                                                                                     | 4.80                    |                 | 1.60           | Loose yellow brown very clayey silty fine sand with a little flint gravel. | 3       | B      | 3.5-3.7             |                 | W               |           |           |         |    |         |   |         |    |
|                                                                                                                                                                                                     | 5.50                    |                 | 0.70           | Firm yellow brown with patches of blue grey clayey sandy silt.             | 4<br>5  | B<br>W | 4.8-5.0             | LC(W)           | 5.00<br>LC(W)   |           |           |         |    |         |   |         |    |
| <p><u>S.P.T. RESULTS</u></p> <table><thead><tr><th>Depth (m)</th><th>'N' Value</th></tr></thead><tbody><tr><td>2.0-2.5</td><td>23</td></tr><tr><td>3.0-3.5</td><td>8</td></tr><tr><td>5.0-5.5</td><td>21</td></tr></tbody></table> <p><u>NOTE</u><br/>Piezometer installed to 5.0m</p> |                         |                 |                |                                                                            |         |        |                     |                 |                 | Depth (m) | 'N' Value | 2.0-2.5 | 23 | 3.0-3.5 | 8 | 5.0-5.5 | 21 |
| Depth (m)                                                                                                                                                                                                                                                                              | 'N' Value               |                 |                |                                                                            |         |        |                     |                 |                 |           |           |         |    |         |   |         |    |
| 2.0-2.5                                                                                                                                                                                                                                                                                | 23                      |                 |                |                                                                            |         |        |                     |                 |                 |           |           |         |    |         |   |         |    |
| 3.0-3.5                                                                                                                                                                                                                                                                                | 8                       |                 |                |                                                                            |         |        |                     |                 |                 |           |           |         |    |         |   |         |    |
| 5.0-5.5                                                                                                                                                                                                                                                                                | 21                      |                 |                |                                                                            |         |        |                     |                 |                 |           |           |         |    |         |   |         |    |

P.F.W.  
2.10.83

## BOREHOLE SECTION SHEET

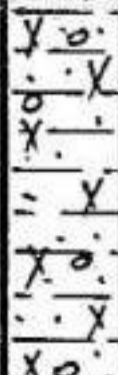
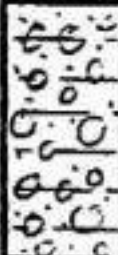
SU 70NW/199

7307 0650

BOREHOLE No. 4

CLIENT: Borough of Havant  
 LOCATION: Denvilles Sewerage  
 BH. DIAMETER: 6"  
 LEVEL A.O.D.: ca +10m

DATE STARTED: 19.11.77  
 DATE FINISHED: 19.11.77  
 PLANT: Pilcon 1 ton  
 CASING SIZE: 6 $\frac{3}{8}$ "

| Leg-<br>end                                                                         | Depth<br>below<br>G.L. | Elev.<br>A.O.D. | Thick-<br>ness | Description of Strata                                                                                  | Samples |      |         | Water<br>Levels | Casi<br>Leve |
|-------------------------------------------------------------------------------------|------------------------|-----------------|----------------|--------------------------------------------------------------------------------------------------------|---------|------|---------|-----------------|--------------|
|                                                                                     |                        |                 |                |                                                                                                        | No.     | Type | Depth   |                 |              |
|   | 0.33                   |                 | 0.33           | Topsoil.                                                                                               |         |      |         |                 |              |
|  | 2.30                   |                 | 1.97           | Soft to firm orange brown loamy clay with some flint gravel.                                           | 1       | B    | 1.0-1.2 | 1.20<br>▽       | BC           |
|  | 3.50                   |                 | 1.30           | Medium dense dark brown claybound flint sand and gravel.                                               | 2       | B    | 2.3-2.5 |                 |              |
|                                                                                     |                        |                 |                |                                                                                                        | 3       | B    | 3.0-3.4 | 3.60<br>▽       |              |
|  | 5.50                   |                 | 1.90           | Medium dense yellow brown silty fine sand with a little fine flint gravel (soft and clayey in places). | 4       | W    |         |                 |              |
|                                                                                     |                        |                 |                |                                                                                                        | 5       | B    | 4.5-5.0 |                 |              |
|                                                                                     |                        |                 |                | NOTES                                                                                                  |         |      |         |                 |              |
|                                                                                     |                        |                 |                | Piezometer installed to 5.0m                                                                           |         |      |         |                 |              |

R.I.v.  
6/10/83

Institute of Geological Sciences  
RECORD OF SHAFT OR BOREHOLE

6-in or 1:10 000 Map Registration No.

SU 70 NW/209

Name and Number of Shaft or Borehole:

Denville's Sowerage B.H. 6

*For whom made*

Havant B.C.

Town or Village

Enoworth

County

Hants.

*Exact site (reference to a fixed point on 1-in or 1:50 000 Map)*

Purpose for which made

trial

Ground level at shaft bore relative to O.D. -ca +10 m. If not ground level give O.D. of beginning of shaft bore \_\_\_\_\_ m.

Made by

Date of sinking

1985

Information from

Havant B.C.

Examined by

## Specimen Numbers and Additional Notes

[illegible]

S470NW/305

S. 242.

## HAMPSHIRE COUNTY COUNCIL—COUNTY ROADS LABORATORY

## BORING RECORD

200mm DIAMETER  
PERCUSSION BORINGCopies to:  
The County Surveyor.

Division S.E.R.C.U.

Road No. A27

Location HAVANT TO CHICHESTER

Sheet No. 1 OF 1

BORE HOLE 501

Lab. No.

Date Sampled

Date Received in Lab.

Ground Level 10.901

Formation Level

Position

Cut or fill

11, 12/9/76

| O.D. Level | Depth | Sample Type | Depth   | Description                                                                                 |
|------------|-------|-------------|---------|---------------------------------------------------------------------------------------------|
| 0.1        | m     |             |         | TOPSOIL                                                                                     |
|            | 0.25  |             |         |                                                                                             |
|            | 0.5   |             |         | Fine light brown sandy CLAY                                                                 |
|            | 0.75  |             |         |                                                                                             |
| 1.0        | 1.0   |             |         |                                                                                             |
|            | 1.25  | M100        | 1.0-1.5 | Very compact brown clay gravel mixture                                                      |
| 1.5        | 1.5   |             |         |                                                                                             |
|            | 1.75  | D           | 1.5-2.1 |                                                                                             |
|            | 2.0   | S.P.T. N=41 | 2.0     |                                                                                             |
|            | 2.25  |             |         | Very compact F.M.C GRAVEL                                                                   |
|            | 2.5   |             |         |                                                                                             |
|            | 2.75  |             |         |                                                                                             |
|            | 3.0   |             |         |                                                                                             |
|            | 3.25  |             |         |                                                                                             |
|            | 3.5   | C.P.T. N=16 | 3.5     | * 1                                                                                         |
|            | 3.75  | C.P.T. N=14 | 4.0     | * 1                                                                                         |
| 4.0        | 4.0   |             |         |                                                                                             |
| E.O.B. #2  | 4.25  |             |         |                                                                                             |
|            | 4.5   |             |         | WATER: * Note dry throughout                                                                |
|            | 4.75  |             |         |                                                                                             |
|            | 5.0   |             |         | NOTES: * 1, C.P.T.'s probably disturbed by obstruction that was pushed down with the casing |
|            | 5.25  |             |         |                                                                                             |
|            | 5.5   |             |         | 2, B.H. discontinued at 4.0 due to presence of obstruction                                  |
|            | 5.75  |             |         |                                                                                             |
|            | 6.0   |             |         |                                                                                             |
|            | 6.25  |             |         |                                                                                             |
|            | 6.5   |             |         |                                                                                             |
|            | 6.75  |             |         |                                                                                             |
|            | 7.0   |             |         |                                                                                             |

Sample Type:

U — undisturbed  
D — disturbed  
W — water  
Dt — tin

..... Manager.

## HAMPSHIRE COUNTY COUNCIL—COUNTY ROADS LABORATORY

## BORING RECORD

Copies to:

The County Surveyor.

Division S.E.R.C.U.

Road No. A27

Location HAVANT TO CHICHESTER

Sheet No. 1 OF 2

BORE HOLE 502

200mm DIAMETER  
PERCUSSION BORING

Lab. No.

Date Sampled

Date Received in Lab.

Ground Level 10.955

Formation Level

Position

Cut or fill

13/9/78

| O.D. Level | Depth | Sample Type   | Depth   | Description                          |
|------------|-------|---------------|---------|--------------------------------------|
|            | m     |               |         |                                      |
| 0.4        | 0.25  |               |         | TOPSOIL                              |
|            | 0.5   |               |         |                                      |
|            | 0.75  |               |         | Fine light brown sandy CLAY.         |
| 1.1        | 1.0   |               |         |                                      |
|            | 1.25  |               |         |                                      |
|            | 1.5   |               |         |                                      |
|            | 1.75  |               |         | Very compact brown clayey GRAVEL.    |
|            | 2.0   | C.P.T<br>N=22 | 2.0     |                                      |
|            | 2.25  |               |         |                                      |
|            | 2.5   |               |         |                                      |
|            | 2.75  |               |         |                                      |
| 3.0        | 3.0   | C.P.T<br>N=21 | 3.0     |                                      |
|            | 3.25  |               |         |                                      |
|            | 3.5   |               |         | Compact clean F.M.C. GRAVEL.         |
|            | 3.75  |               |         |                                      |
| 4.1        | 4.0   | S.P.T<br>N=11 | 4.0     |                                      |
|            | 4.25  |               |         |                                      |
|            | 4.5   |               |         | Fine / stiff grey Roswell silty CLAY |
|            | 4.75  |               |         |                                      |
|            | 5.0   |               |         | becoming very stiff.                 |
|            | 5.25  | U100          | 5.0-5.5 |                                      |
|            | 5.5   |               |         |                                      |
|            | 5.75  |               |         |                                      |
|            | 6.0   |               |         |                                      |
|            | 6.25  | U100          | 6.0-6.5 |                                      |
|            | 6.5   |               |         |                                      |
|            | 6.75  |               |         |                                      |
|            | 7.0   |               |         |                                      |

Sample Type:

U — undisturbed  
 D — disturbed  
 W — water  
 Dt — tin

..... Manager.

HAMPSHIRE COUNTY COUNCIL—COUNTY ROADS LABORATORY

**BORING RECORD** — PERCUSSION BORING RIG.  
200MM DIA HOLE

Copies to:  
The County Surveyor.

Division S.E.R.C.U

Road No.

Location A27 HAVANT CHICHESTER

Sheet No. 1 of 3

BORE HOLE N° 504

Lab. No.

Date Sampled

Date Received in Lab.

Ground Level 11.401

Formation Level

Position

Cut or fill

} 3-4 AUGUST 1978

| O.D. Level | Depth | Sample Type | Depth   | Description                                                                       |
|------------|-------|-------------|---------|-----------------------------------------------------------------------------------|
| 0.2        | m     |             |         | TOPSOIL                                                                           |
| 0.4        | 0.25  |             |         | Brown silty fine SAND with some F.M. gravel.                                      |
|            | 0.5   |             |         | Firm / Stiff orange brown silty CLAY                                              |
|            | 0.75  |             |         |                                                                                   |
|            | 1.0   |             |         |                                                                                   |
|            | 1.25  | U100        | 1.0-1.5 | becoming very gravelly clay.                                                      |
|            | 1.5   |             |         |                                                                                   |
| 1.9        | 1.75  | SPT N=27    | 2.0     | Medium dense F.M.c gravel in a firm brown clay matrix.                            |
|            | 2.0   |             |         |                                                                                   |
|            | 2.25  | D           | 2.5     | — clay matrix becoming soft.                                                      |
|            | 2.5   |             |         |                                                                                   |
|            | 2.75  | SPT* N=2    | 3.0     |                                                                                   |
| 3.1        | 3.0   |             |         |                                                                                   |
|            | 3.25  |             |         |                                                                                   |
|            | 3.5   | D           | 3.5     | Very loose F.M.c gravel with cobbles and zones of soft grey silty and peaty clay. |
|            | 3.75  | SPT N=10    | 4.0     |                                                                                   |
|            | 4.0   |             |         |                                                                                   |
| 4.4        | 4.25  |             |         |                                                                                   |
|            | 4.5   |             |         |                                                                                   |
|            | 4.75  |             |         |                                                                                   |
|            | 5.0   |             |         | Stiff grey fissured silty CLAY                                                    |
|            | 5.25  | U100        | 5.0-5.5 |                                                                                   |
|            | 5.5   |             |         |                                                                                   |
|            | 5.75  |             |         |                                                                                   |
|            | 6.0   |             |         |                                                                                   |
|            | 6.25  | U100        | 6.0-6.5 |                                                                                   |
|            | 6.5   |             |         | with laminations of grey silty fine sand.                                         |
|            | 6.75  |             |         |                                                                                   |
|            | 7.0   |             |         |                                                                                   |

Sample Type:

- U — undisturbed
- D — disturbed
- W — water
- Dt — tin

\* (Water level rising very quickly during test to 2.6m)

..... Manager.

## HAMPSHIRE COUNTY COUNCIL—COUNTY ROADS LABORATORY

## BORING RECORD

Copies to:  
The County Surveyor.200mm DIAMETER  
PERCUSSION BORING

Division S.E.R.C.U.  
 Road No. A27  
 Location HAVANT TO CHICHESTER  
 Sheet No. 1 OF 3  
 BORE HOLE 505

Lab. No.

Date Sampled

Date Received in Lab.

Ground Level 11.71

Formation Level

Position

Cut or fill

20, 23, 24/10/78

| O.D. Level | Depth | Sample Type                         | Depth   | Description                                              |
|------------|-------|-------------------------------------|---------|----------------------------------------------------------|
| 0.3        | 0.25  |                                     |         | TOPSOIL                                                  |
|            | 0.5   |                                     |         |                                                          |
|            | 0.75  | U100                                | 0.5-0.8 | Firm orange brown silty fine sandy CLAY.                 |
|            | 1.0   |                                     |         |                                                          |
| 1.3        | 1.25  |                                     |         |                                                          |
|            | 1.5   | D                                   | 1.5     |                                                          |
|            | 1.75  | S.P.T<br>N=13                       | 1.5     | Medium dense orange brown silty sandy very clayey GRAVEL |
|            | 2.0   |                                     |         | - becoming less dense and less clayey with depth         |
|            | 2.25  | D                                   | 2.2     |                                                          |
|            | 2.5   |                                     |         |                                                          |
| 2.7        | 2.75  |                                     |         |                                                          |
|            | 3.0   |                                     |         | Loose and very wet clayey silty fine SAND                |
|            | 3.25  | D                                   | 3.0-4.0 |                                                          |
|            | 3.5   |                                     |         |                                                          |
|            | 3.75  | S.P.T, SUMR under<br>own weight 3.5 |         |                                                          |
|            | 4.0   |                                     |         |                                                          |
| 4.2        | 4.25  |                                     |         | Medium dense grey clayey f.m.c GRAVEL                    |
| 4.4        | 4.5   | S.P.T<br>N=12                       | 4.5     |                                                          |
|            | 4.75  |                                     |         | Large flints in a matrix of firm grey silty CLAY         |
| 5.1        | 5.0   | D                                   | 4.5-5.5 |                                                          |
|            | 5.25  |                                     |         | Very stiff grey silty CLAY.                              |
|            | 5.5   |                                     |         |                                                          |
|            | 5.75  | U100                                | 5.5-6.0 |                                                          |
|            | 6.0   |                                     |         |                                                          |
|            | 6.25  |                                     |         |                                                          |
|            | 6.5   |                                     |         |                                                          |
|            | 6.75  | U100                                | 6.5-7.0 |                                                          |
|            | 7.0   |                                     |         |                                                          |

Sample Type:

U — undisturbed  
 D — disturbed  
 W — water  
 Dt — tin

..... Manager.

S470NW/311

S. 242.

## HAMPSHIRE COUNTY COUNCIL—COUNTY ROADS LABORATORY

## BORING RECORD

200mm DIAMETER  
PERCUSSION BORINGCopies to:  
The County Surveyor.

Division S.E.R.C.U.

Road No. A27

Location HAVANT TO CHICHESTER

Sheet No. 1 OF 1

BORE HOLE 507

Lab. No.

Date Sampled

11-10-78

Date Received in Lab.

Ground Level 11.165

Formation Level

Position

Cut or fill

| O.D. Level | Depth | Sample Type    | Depth   | Description                                                                                     |
|------------|-------|----------------|---------|-------------------------------------------------------------------------------------------------|
|            | m     |                |         |                                                                                                 |
| 0.3        | 0.25  |                |         | TOPSOIL                                                                                         |
|            | 0.5   |                |         | Stiff orange brown mottled slightly gravelly silty CLAY                                         |
|            | 0.75  |                |         |                                                                                                 |
|            | 1.0   |                |         |                                                                                                 |
|            | 1.25  | U100           | 1.0-1.5 | - becoming softer and more gravelly with depth                                                  |
| 1.5        | 1.5   |                |         |                                                                                                 |
|            | 1.75  | D              | 1.7     | Soft brown/white very gravelly cherty CLAY                                                      |
|            | 2.0   | S.P.T.<br>N=8  | 2.0     |                                                                                                 |
| 2.3        | 2.25  |                |         |                                                                                                 |
|            | 2.5   |                |         | Soft orange brown silty clayey SAND                                                             |
|            | 2.75  | D              | 2.5-3.0 |                                                                                                 |
|            | 3.0   | S.P.T.<br>N=6  | 3.0     |                                                                                                 |
|            | 3.25  |                |         |                                                                                                 |
|            | 3.5   | U100           | 3.5-4.0 |                                                                                                 |
| 3.8        | 3.75  |                |         |                                                                                                 |
|            | 4.0   |                |         | Medium dense grey/brown silty fine SAND                                                         |
|            | 4.25  | S.P.T.<br>N=16 | 4.3     | - with many black pebbles and some grey clay                                                    |
| 4.6        | 4.5   |                |         |                                                                                                 |
|            | 4.75  |                |         | Stiff grey silty CLAY with many black pebbles on entry and laminations of grey silty fine sand. |
|            | 5.0   |                |         |                                                                                                 |
|            | 5.25  |                |         |                                                                                                 |
|            | 5.5   | U100           | 5.5-6.0 | - becoming very stiff grey silty CLAY.                                                          |
|            | 5.75  |                |         |                                                                                                 |
| 6.0        | 6.0   |                |         |                                                                                                 |
| E.O.B.     | 6.25  |                |         | WATER: Water strike at 1.4m sealed off at 4.6m                                                  |
|            | 6.5   |                |         |                                                                                                 |
|            | 6.75  |                |         |                                                                                                 |
|            | 7.0   |                |         |                                                                                                 |

Sample Type:

U — undisturbed  
 D — disturbed  
 W — water  
 Dt — tin

..... Manager.

## **Appendix 2: Policy 15: Safeguarding mineral resources**

## Minerals

### Safeguarding mineral resources

- 6.14** As minerals can only be worked where they are found, it is important to 'safeguard' viable mineral resources from needless sterilisation by other development to secure a future long term supply of minerals. National planning policy requires Mineral Planning Authorities (MPAs) to 'secure an adequate and steady supply of indigenous minerals' <sup>(77)</sup> needed to support sustainable growth whilst encouraging the recycling of suitable materials to minimise the requirement for new primary extraction. National planning policy also requires MPAs 'to define Minerals Safeguarding Areas (MSA) in order that proven resources are not needlessly sterilised by non-mineral development, whilst not creating a presumption that resources defined will be worked, and where appropriate regeneration can be facilitated' <sup>(78)</sup>.



#### Policy 15: Safeguarding - mineral resources

Hampshire's sand and gravel (sharp sand and gravel and soft sand), silica sand and brick-making clay resources are safeguarded against needless sterilisation by non-minerals development, unless 'prior extraction' takes place.

Safeguarded mineral resources are defined by a Mineral Safeguarding Area illustrated on the Policies Map.

Development without the prior extraction of mineral resources in the Mineral Safeguarding Area may be permitted if:

- a. it can be demonstrated that the sterilisation of mineral resources will not occur; or
- b. it would be inappropriate to extract mineral resources at that location, with regards to the other policies in the Plan; or
- c. the development would not pose a serious hindrance to mineral development in the vicinity; or
- d. the merits of the development outweigh the safeguarding of the mineral.

The soft sand / potential silica sand resources at Whitehill & Bordon (Inset Map 5), further illustrated on the Policies Map are included within the MSA and are specifically identified for safeguarding under this policy.

<sup>77</sup> National Planning Policy Framework, paragraph 145 (DCLG, 2012)

<sup>78</sup> National Planning Policy Framework, paragraph 143 (DCLG, 2012)

### **Appendix 3: Water level monitoring borehole results**

**Site** Emsworth Triangle Site - Saxon Corner Phase 2

**Client** BDW Southampton



**Winter Water Level Monitoring Results** - measured in metres below ground level (m bgl)

| Date        | BH1  | BH2  | BH3  | BH4  | BH5  |
|-------------|------|------|------|------|------|
| 12 Dec 2019 | 2.30 | 1.45 | 2.52 | 2.10 | 0.97 |
| 14 Jan 2020 | 1.47 | 0.87 | 2.37 | 1.80 | 0.40 |
| 15 Feb 2020 | 1.80 | 0.75 | 2.20 | 1.85 | 0.33 |
| 12 Mar 2020 | 1.97 | 1.03 | 2.10 | 1.68 | 0.42 |
| 31 Oct 2020 | 2.03 | 1.45 | 3.00 | 1.97 | 1.44 |
| 17 Nov 2020 | 1.63 | 0.99 | 1.79 | 1.47 | 0.38 |
| 18 Dec 2020 | 1.59 | 0.97 | 1.78 | 1.45 | 0.38 |
| 19 Jan 2021 | 1.62 | 1.05 | 1.84 | 1.51 | 0.43 |
| 15 Feb 2021 | 1.65 | 1.11 | 1.89 | 1.59 | 0.50 |

## DRAWINGS



|               |                                     |          |             |                                                                                       |              |             |            |
|---------------|-------------------------------------|----------|-------------|---------------------------------------------------------------------------------------|--------------|-------------|------------|
| CLIENT        | BDW SOUTHAMPTON                     | DRG No   | ST18915-001 | SCALE                                                                                 | 1:5,000 @ A4 | DATE        | 29/06/2021 |
| PROJECT       | LAND OFF ST GEORGE'S AVENUE, HAVANT | DRAWN BY | BVC         | CHECKED BY                                                                            | SDB          | APPROVED BY | SDB        |
| DRAWING TITLE | SUPERFICIAL GEOLOGY                 |          |             |  |              |             |            |

**STOKE-ON-TRENT**

Sir Henry Doulton House  
Forge Lane  
Etruria  
Stoke-on-Trent  
ST1 5BD  
Tel: +44 (0)1782 276 700

**BIRMINGHAM**

Two Devon Way  
Longbridge Technology Park  
Longbridge  
Birmingham  
B31 2TS  
Tel: +44 (0)121 580 0909

**BOLTON**

41-50 Futura Park  
Aspinall Way  
Middlebrook  
Bolton  
BL6 6SU  
Tel: +44 (0)1204 227 227

**BRISTOL**

Desk Lodge  
2 Redcliffe Way  
Bristol  
BS1 6NL

**BURY ST EDMUNDS**

6 Brunel Business Court  
Eastern Way  
Bury St Edmunds  
Suffolk  
IP32 7AJ  
Tel: +44 (0)1284 765 210

**CARDIFF**

Tudor House  
16 Cathedral Road  
Cardiff  
CF11 9LJ  
Tel: +44 (0)292 072 9191

**CARLISLE**

Marconi Road  
Burgh Road Industrial  
Estate Carlisle  
Cumbria  
CA2 7NA  
Tel: +44 (0)1228 550 575

**EDINBURGH**

Great Michael House  
14 Links Place  
Edinburgh  
EH6 7EZ  
Tel: +44 (0)131 555 3311

**GLASGOW**

2 West Regent Street  
Glasgow  
G2 1RW  
Tel: +44 (0)141 433 7210

**LEEDS**

36 Park Row  
Leeds  
LS1 5JL  
Tel: +44 (0)113 831 5533

**LONDON**

Third Floor  
46 Chancery Lane  
London  
WC2A 1JE  
Tel: +44 (0)207 242 3243

**NEWCASTLE UPON TYNE**

City Quadrant  
11 Waterloo Square  
Newcastle upon Tyne  
NE1 4DP  
Tel: +44 (0)191 232 0943

**TRURO**

Baldhu House  
Wheal Jane Earth Science Park  
Baldhu  
Truro  
TR3 6EH  
Tel: +44 (0)187 256 0738

**International offices:**

**ALMATY**

29/6 Satpaev Avenue  
Hyatt Regency Hotel  
Office Tower  
Almaty  
Kazakhstan  
050040  
Tel: +7(727) 334 1310

**MOSCOW**

21/5 Kuznetskiy Most St.  
Moscow  
Russia  
Tel: +7(495) 626 07 67