CD2.1

Wardell Armstrong
Sir Henry Doulton House, Forge Lane, Etruria, Stoke-on-Trent, ST1 5BD, United Kingdom
Telephone: +44 (0)1782 276 700 www.wardell-armstrong.com

Our ref: SDB/ST20570/01 *Date*: 14th March 2024
Your ref: CONS/2024/0070

Mr Andy Denton
Principal Policy Officer
Hampshire County Council
Elizabeth II Court South
The Castle
Winchester
Hampshire SO23 8UH

Dear Mr Denton

Proposed development at land off Halterworth Lane, Romsey, Hants

I refer to your consultation response ref CONS/2024/0070 to Test Valley Borough Council dated 5th February 2024, which has been forwarded to my client Gladman Developments Ltd. That response document related to a Mineral Resource Assessment which had been prepared by me and submitted to Test Valley BC by our client. Your letter raised a number of points regarding omissions of data and I am now in a position to provide you with answers, as the relevant geological data were not available at the time we prepared the initial Mineral Resource Assessment. The supporting evidence has been integrated into the attached "Updated Mineral Resource Assessment March 2024" and I have set out below the paragraph numbers in the MRA where we have provided answers to the points you raised in your letter of the 5th February.

Lack of empirical geological data – the updated MRA Appendices 2, 3 and 4 contain empirical data in the form of logs of 9 trial pits and 3 boreholes constructed on the site together with records of groundwater levels in the 3 boreholes.

Use of any minerals present on the site – the groundwater table on site is too high, and the quantity of mineral on site is too small, for the mineral to be commercially useable, but a calculation of mineral quantity is set out in paragraph 4.1.5 and reference as to potential use is made at para 4.1.9.

In-situ evidence as to the potential mineral reserve – please see Appendices 2, 3 and 4 which provide records of the site investigation findings.

Evidence supporting the use of a 100m standoff for sensitive receptors - please see paragraph 4.1.7 for reference to Hampshire MWP paragraph 5.15 which specifies guidance on minimum buffer zones of 100m and drawing ST20570-001 which shows a 100m buffer zone boundary.

Approach to a local mineral operator – I have tried this before in Hampshire and other counties, without getting any reply. The minimum tonnage of mineral that would be of interest to even a small local operator would be in the order of 1 million tonnes to reach break-even. Although in theory it is a reasonable enough suggestion to approach an operator, anything much less than 1 million tonnes is simply not a commercially viable option in the modern minerals industry. We have recently undertaken a feasibility study to determine financial viability of opening a 0.5 million tonne deposit. The study found that it would inevitably incur a loss due to high establishment and operating costs. In any event, wholesale excavation of mineral from this site would result in a lake, due to the high water table just below the land surface, which would preclude the proposed development.

I trust that this information is sufficient to meet the MPA's requirement for the MRA to be consistent with Policy 5 of the adopted HMWP, but if you have any queries or comments, please do let me know.

Yours sincerely
For Wardell Armstrong LLP

[redacted]

Stephen Barry FRICS
Chartered Minerals Surveyor & Technical Director

Cc Mike Heming ([redacted])

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

GLADMAN DEVELOPMENTS LTD

PROPOSED DEVELOPMENT AT LAND OFF HALTERWORTH LANE, ROMSEY, HANTS

UPDATED MINERAL RESOURCE ASSESSMENT MARCH 2024.

MARCH 2024

wardell armstrong

Wardell Armstrong
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DATE ISSUED:	**MARCH 2024**
JOB NUMBER:	**ST20570**
REPORT NUMBER:	**001**
VERSION:	**V1.3**
STATUS:	**Final**

GLADMAN DEVELOPMENTS LTD

PROPOSED DEVELOPMENT AT LAND OFF HALTERWORTH LANE, ROMSEY, HANTS

UPDATED MINERAL RESOURCE ASSESSMENT MARCH 2024.

MARCH 2024

PREPARED AND
APPROVED BY:

Stephen Barry — Technical Director and Chartered Mineral Surveyor [redacted]

CONTENTS

APPENDICES

DRAWINGS	**TITLE**
ST20570-001	Geology and 100m Buffer Zone Boundary

1 EXECUTIVE SUMMARY

This report has been prepared to support a planning application by Gladman Developments Ltd for proposed development on land off Halterworth Road, Romsey. The site has been reviewed in relation to the mineral safeguarding policies of the Hampshire County Council adopted Minerals and Waste Local Plan.

The site comprises approximately 12.7 ha of agricultural land. Published geological maps for the area indicate that the superficial geology on the site comprises a river terrace sand and gravel deposit approximately 2.0m thick, which is the safeguarded mineral resource on the site. The solid geology comprises the Earnley Sand Formation, which is composed of sand, silt and clay and is not a safeguarded mineral resource. This geological sequence is confirmed by site investigation data enclosed in this report.

The proposed development is in a mineral safeguarding area for sharp sand and gravel and there is sand and gravel on the site. However, the area of the site is very small in the context of mineral extraction and if the mineral were to be worked, then a 100m wide buffer zone would be required by the mineral planning authority to protect the amenity of existing residents. The buffer zone would cover approximately half the site. The safeguarding policy is intended to safeguard “viable” mineral resources.

It is clear that the thin nature of the deposit, the proximity of existing residential property and a primary school, and the high water table, mean that any mineral extraction would be inappropriate. The proposed development is therefore compatible with Mineral Policy 15 Criterion 1 (because the mineral is not viable) and Mineral Policy 15 Criterion 2 (because mineral extraction would be inappropriate at this location).

2 INTRODUCTION

2.1.1 This report has been prepared in accordance with instructions from Gladman Developments Limited to prepare a Mineral Resource Assessment report in support of a planning application for proposed development on land off Halterworth Lane, Romsey. The proposed development site is located to the east of Romsey. The site boundary is shown edged red on the Location Plan attached at Appendix 1. The north of the site is bordered by open agricultural land with Highwood Lane beyond. There is further agricultural land to the east. The southern boundary is adjacent to existing residential dwellings off Elmtree Gardens and Botley Road, with the Halterworth Primary School adjacent to the south west. There are further residential dwellings to the west which front on to Halterworth Lane.

3 SITE GEOLOGY

3.1.1 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".

3.2 Superficial deposits

3.2.1 The British Geological Survey (BGS) online geological map shows that the entire site is covered by a river terrace sand and gravel deposit, as shown on drawing no. ST20570-001. The sand and gravel deposit is a safeguarded mineral resource, as it contains sharp sand and gravel. The geological map data is supplemented by 9 trial pit logs at Appendix 2, 3 borehole logs at Appendix 3 and groundwater depth monitoring data at Appendix 4. The borehole location plan is attached at Appendix 5. The logs of the trial pits and the boreholes confirm that the superficial deposits comprise sandy gravel to an average depth of approximately 2.4m. The borehole logs indicate that the superficial sands are underlain by approximately 2.0m of silty clay (Head).

3.2.2 The area of the sand and gravel deposit on the site is not large enough to comprise a commercially viable mineral resource and is too thin to represent a commercially viable mineral.

3.3 Solid Geology

3.3.1 The BGS online geological map indicates that the solid geology on the site is the Earnley Sand Formation. This Formation is composed of sand, silt and clay and is not a safeguarded mineral resource. The three borehole logs intersected the Earnley Sand Formation at depths of 4-6m below ground level (bgl)continuing to a depth of 12m bgl at borehole termination.

3.4 Groundwater

3.4.1 Groundwater level monitoring was undertaken in the 3 boreholes between November 2023 and February 2024. The results are shown on the attached graph of "Groundwater monitoring data" at Appendix 4. The monitoring data show that groundwater is present at approximately 1m below ground level (bgl) in boreholes 1 and 2 and at 1.5-2m bgl in borehole 3.

3.4.2 The consequence of this is that if mineral extraction were to be undertaken, the site would become either seasonally waterlogged or a permanent lake. It is therefore clear that mineral extraction is not feasible with house building on this site due to the high level of the water table.

4 MINERAL SAFEGUARDING POLICY

4.1.1 The site is located in the administrative area of Hampshire County Council which is the Mineral Planning Authority (MPA). The current planning policy for mineral development in Hampshire is the Hampshire Minerals and Waste Plan (HMWP) adopted in October 2013. Mineral resources and minerals and waste infrastructure are safeguarded through the provisions of the HMWP. This is an important consideration for non-mineral developers and district and borough councils when non-mineral developments are proposed within a Mineral Safeguarding Area (MSA).

4.1.2 The relevant mineral safeguarding policy is "Policy 15 – Safeguarding Mineral Resources", a copy of which is attached at Appendix 6. The policy sets out the criteria that would need to be satisfied to support non-mineral development in an MSA. In summary, Policy 15 states that development without prior extraction in an MSA may be permitted if:

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

4.1.3 The HMWP is supplemented by the "Minerals and Waste Safeguarding in Hampshire Supplemental Planning Document" (MWSPD) which was adopted in February 2016. The MWSPD provides additional detail on the policies of the HMWP and guidance on the implementation of those policies. The MWSPD states at paragraph 2.5 that "soft sand and silica sand resources are more scarce in Hampshire compared to sharp sand and gravel and this may be reflected in the approach the Hampshire Authorities take to proposals that may sterilise these resources." This statement indicates that the MPA considers that sharp sand, such as that found on this site, is less important than soft sand and silica sand.

Compliance with adopted safeguarding policy
Criterion 1

4.1.4 The sand and gravel on the site is safeguarded by Hampshire County Council. However, the entire site is less than 13 ha in extent, which is much too small to accommodate a commercial mineral extraction operation. Furthermore, the site

adjoins existing residential development. Paragraph 5.15 of the M&WLP states at paragraph 5.15 that "It is standard practice in Hampshire for mineral extraction sites to have a minimum buffer zone of 100m from sensitive human receptors". The edge of the 100m buffer zone is shown as a black dashed line on drawing no ST20570-001. The buffer zone covers the western half of the site, leaving approximately 5ha of the site beyond the 100m standoff from houses to the west.

Potential mineral yield

4.1.5 In order to be commercially viable, sand and gravel resources need to cover areas containing tonnages exceeding 0.5 million tonnes of mineral. The potential mineral yield from this site is effectively nil because the unconstrained site area is too small, and the mineral deposit too thin, to contain a commercially viable quantity of mineral, as shown by the following calculation:

Approximate gross area outside 100m buffer zone is 500m long x 100m wide = 50,000 sq m

Deduct 10m width for noise bund on west side of potential excavation = 45,000 sq m

Average thickness 2m = 90,000 cu m

Density 1.6 t/cu m = 144,000 tonnes

Deduction for 10% silt and other losses = 0.9 x 144,000 = 129,600 tonnes

Theoretical yield would be, say, 130,000 tonnes

4.1.6 A yield of 130,000 tonnes is a small fraction of the minimum tonnage that would be worth the cost of a mineral planning application, particularly in view of the fact that any excavation is likely to result in groundwater flooding, so there is no realistic possibility that the mineral in this site would ever be worked commercially. Consequently, the mineral is already sterilised in practical terms due to its small size, the high water table and proximity to adjoining residential properties, so the proposed development would not cause any more sterilisation in addition to existing sterilisation.

Criterion 2

4.1.7 Most of the safeguarded mineral has already been indirectly sterilised by existing residential development to the south and west of the site. Paragraph 5.15 of the HMWP states that it is standard practice in Hampshire for mineral extraction sites to have a minimum buffer zone of 100m from sensitive human receptors. If the safeguarded mineral were to be worked, then a buffer zone of at least 100m width on

the western side of the site would be needed, which would cover approximately half of the site, as delineated by the black dashed line on drawing ST20570-001. Once the buffer zone is taken into account, the remaining area of sand and gravel would be approximately 5ha in extent, which is too small to be a commercially viable mineral resource. There is also a primary school and a Grade 2 listed cottage on the southern boundary of the site and as these properties are particularly sensitive, they may require an extended buffer zone. As a consequence of the presence and proximity of existing residential and sensitive development, any extraction of the safeguarded mineral from the site would clearly be inappropriate.

Benefits of the development

4.1.8 If the proposed housing development did not take place, the site would remain as agricultural land since it is highly unlikely that the superficial deposits would ever be worked for mineral extraction due to the proximity to housing. The benefits of the housing development will be clearly shown in the relevant planning application documents. If the planning application is approved, the proposed development will not have any additional impact in terms of mineral sterilisation.

Prior extraction

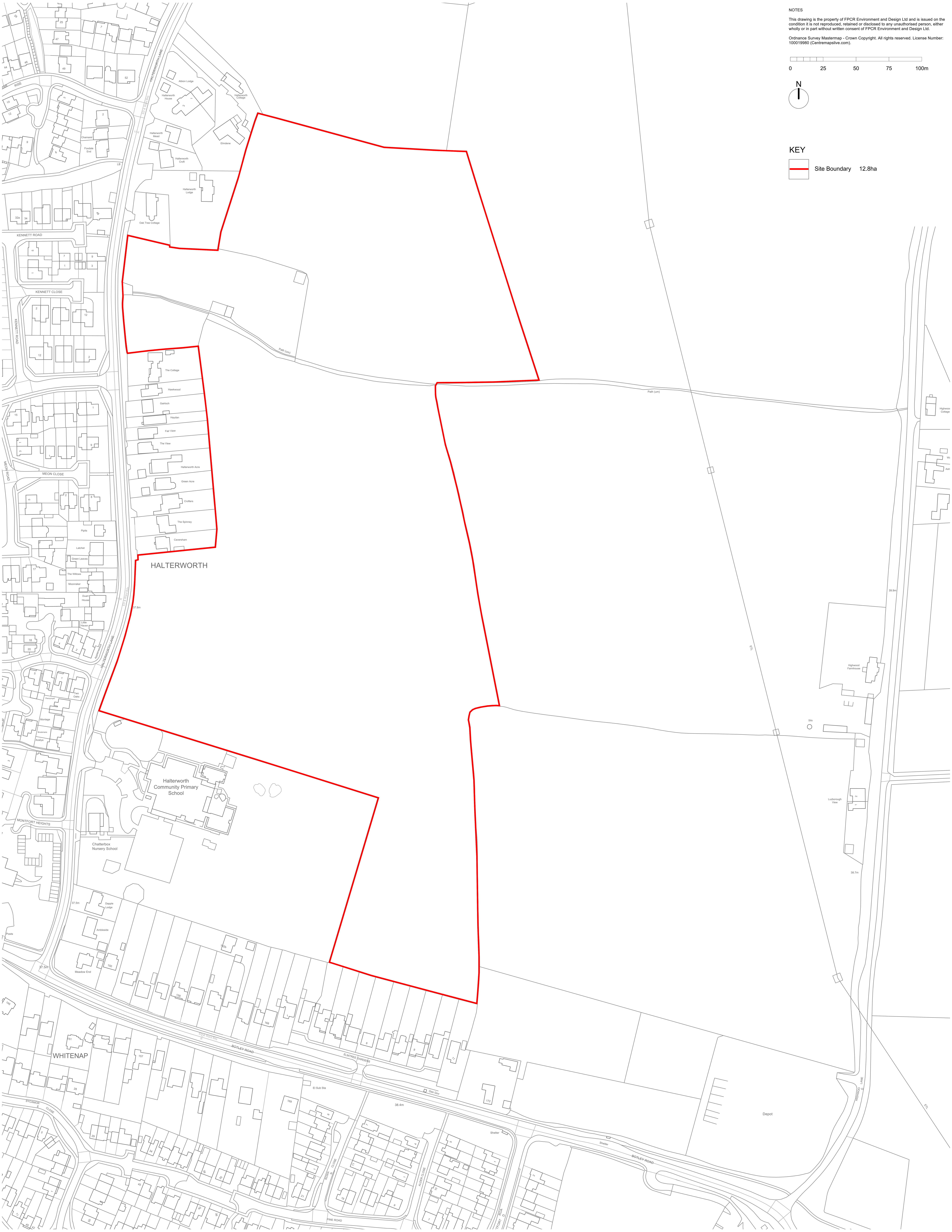
4.1.9 Prior extraction on this site would not be practicable or feasible. If prior extraction were to take place, then the mineral would need to be taken to an off-site processing plant. The site would then fill with groundwater or would need to be infilled with something to replace the extracted sand and gravel and brought up to the level of surrounding land prior to any development taking place. However it may be possible that a limited amount of incidental mineral may become available during the course of site preparation and construction, which might be suitable as a general fill material.

5 CONCLUSION

5.1.1 The proposed development site is located in a mineral safeguarding area for sharp sand and gravel. However, the unconstrained site area is approximately 5 ha which is very small in the context of mineral resources and is too small to accommodate a commercial mineral extraction operation, so there is no realistic prospect that the mineral resource would ever be worked. There are numerous constraints surrounding the site including existing residential development, a primary school and a Grade 2 listed building. If the mineral were to be worked then a buffer zone of at least 100m would be needed to protect the amenity of residents. The buffer zone would cover approximately half of the site and would make the already small quantity of mineral even smaller. The calculations in this Mineral Resource Assessment show that the area of sand and gravel is too small to be a commercially viable mineral resource. It is clear that the proximity of existing development surrounding the site means that any mineral extraction in this location would be inappropriate. The site therefore meets the requirements of criterion 1 and criterion 2 of the mineral safeguarding Policy 15 so the proposed development would be compatible with the County Council's mineral safeguarding policy.

Appendix 1

Site Boundary Edged Red



NOTES

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0 25 50 75 100m

N

KEY

Site Boundary 12.8ha

9840
Halterworth Lane, Romsey
Gladman Developments Ltd

Location Plan

S1 1:1250 @ A1
January 2024 CTH / KMN
09840-FPCR-ZZ-ZZ-DR-L-0004 issue P02
Project Code - Originator - Zone - Level - Type - Role - Drawing Number

masterplanning
environmental assessment
landscape design
urban design
ecology
architecture
arboriculture

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File: K:\9800\9840\LANDS\Plans\09840-FPCR-ZZ-ZZ-DR-L-0002 P09.vwx

Appendix 2

Trial Pit Logs

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site				
Halterworth Lane, Romsey				**TP1**
Job No: SHF.1132.258	Dates: Start 30-10-23, Finish 30-10-23	Ground Level (m)	Co-Ordinates	
Client: Gladman Develpoments				Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
							Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				0.30			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
▽				1.60			Trial Pit completed at 1.60m.
				{2.00}			

0 — 1 — 2

General Remarks

Dimensions: 3.00x0.60x1.60
1. Machine excavated pit from ground level to 1.60mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Perched groundwater was encountered as a slight seepage at 1.50m bgl.
4. Backfilled with arisings.

All dimensions in metres
Scale 1:12.5

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site: Halterworth Lane, Romsey

TP2

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 30-10-23 Finish 30-10-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
				0.20			Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
▽				1.50			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
				{2.00}			Trial Pit completed at 1.50m.

0
1
2

General Remarks

Dimensions: 2.10x0.60x1.50
1. Machine excavated pit from ground level to 1.50mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Perched groundwater was encountered at 1.20m as a large water strike filling the pit.
4. Soakaway testing was not undertaken at this location due to the perched groundwater causing pit instability and collapse.
5. Backfilled with arisings.

All dimensions in metres
Scale 1:12.5

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site				TP3
Halterworth Lane, Romsey				
Job No: SHF.1132.258	Dates: Start 01-11-23, Finish 01-11-23	Ground Level (m)	Co-Ordinates	
Client: Gladman Develpoments				Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
				0.25			Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				1.70			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
				{2.00}			Trial Pit completed at 1.70m.

0
1
2

General Remarks

Dimensions: 2.00x0.60x1.70
1. Machine excavated pit from ground level to 1.70mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Groundwater was not encountered.
4. Backfilled with arisings.

All dimensions in metres Scale 1:12.5		Logged By RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site: Halterworth Lane, Romsey

TP4

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 01-11-23 Finish 01-11-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
				0.00			Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				0.30			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
				1.60			Trial Pit completed at 1.60m.
				{2.00}			

0
1
2

General Remarks

Dimensions: 2.10x0.60x1.60
1. Machine excavated pit from ground level to 1.60mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Groundwater was not encountered.
4. Backfilled with arisings.

All dimensions in metres
Scale 1:12.5

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site: Halterworth Lane, Romsey

TP5

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 30-10-23 Finish 30-10-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	Samples & In Situ Testing: No/Type	Samples & In Situ Testing: Results	Depth (m)	Level (mAD)	Legend	Stratum Description
							Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				0.30			Brown clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
				1.70			Trial Pit completed at 1.70m.
				{2.00}			

0
1
2

General Remarks

Dimensions: 2.10x0.60x1.70
1. Machine excavated pit from ground level to 1.70mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Groundwater was not encountered.
4. Backfilled with arisings.

All dimensions in metres
Scale 1:12.5

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site				
Halterworth Lane, Romsey				**TP6**
Job No: SHF.1132.258	Dates: Start 31-10-23, Finish 31-10-23	Ground Level (m)	Co-Ordinates	
Client: Gladman Develpoments				Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
							Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				0.20			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
▽				1.80			Trial Pit completed at 1.80m.
				{2.00}			

0
1
2

General Remarks

Dimensions: 2.10x0.60x1.80
1. Machine excavated pit from ground level to 2.10mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Perched groundwater was encountered as a slight seepage at 1.50m.
4. Backfilled with arisings.

All dimensions in metres
Scale 1:12.5

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site				
Halterworth Lane, Romsey				**TP7**
Job No: SHF.1132.258	Dates: Start 31-10-23, Finish 31-10-23	Ground Level (m)	Co-Ordinates	
Client: Gladman Develpoments				Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
							Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				0.25			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
▽				1.60			Trial Pit completed at 1.60m.
				{2.00}			

0
1
2

General Remarks

Dimensions: 2.20x0.60x1.60
1. Machine excavated pit from ground level to 1.60mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Perched groundwater was encountered as a slight seepage at 1.60m.
4. Backfilled with arisings.

All dimensions in metres Scale 1:12.5		Logged By RF

Enzygo Ltd
Tel: 01454 269237
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Web: www.enzygo.com

Site: Halterworth Lane, Romsey

TP8

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 30-10-23 Finish 30-10-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	Samples & In Situ Testing: No/Type	Samples & In Situ Testing: Results	Depth (m)	Level (mAD)	Legend	Stratum Description
							Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				0.30			Brown clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
				1.80			Trial Pit completed at 1.80m.
				{2.00}			

0
1
2

General Remarks

Dimensions: 2.80x0.60x1.80
1. Machine excavated pit from ground level to 1.80mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Groundwater was not encountered.
4. Backfilled with arisings.

All dimensions in metres
Scale 1:12.5

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site: Halterworth Lane, Romsey

TP9

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 01-11-23 Finish 01-11-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Water Levels	Samples & In Situ Testing: Depth (m)	Samples & In Situ Testing: No/Type	Samples & In Situ Testing: Results	Depth (m)	Level (mAD)	Legend	Stratum Description
							Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
				0.20			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
▽							
				1.70			Trial Pit completed at 1.70m.
				{2.00}			

0
1
2

General Remarks

Dimensions: 3.00x0.60x1.70
1. Machine excavated pit from ground level to 1.70mbgl.
2. Densities and soil consistencies are based on field observations and insitu tests.
3. Perched groundwater was encountered as a slight seepage at 1.30m bgl.
4. Backfilled with arisings.

All dimensions in metres
Scale 1:12.5

Logged By: RF

Appendix 3
Borehole Logs

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site: Halterworth Lane, Romsey

BH1

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 30-10-23 Finish 30-10-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Well	Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
					0.40			Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
					1.60			Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
	▽	3.00	SPT	N=14				Stiff yellow slightly silty sandy CLAY. Sand is fine to coarse. [Head]
					5.70			
		6.00	SPT	N=18	6.00			Medium dense dark bluish grey silty very clayey fine to coarse SAND. [Earnley Sand Formation]
								Dense grey silty very cleyey fine to coarse SAND. [Earnley Sand Formation]
		9.00	SPT	N=35				
	▽	12.00	SPT	N=29	12.00			Borehole completed at 12.00m.
					{12.50}			

0 1 2 3 4 5 6 7 8 9 10 11 12

General Remarks

1. Hand excavated inspection pit from ground level to 1.00m begl.
2. Densities and soil consistencies are based on insitu tests.
3. No visual or olfactory evidence of contamination observed.
4. Groundwater was encoutered.
5. SPT - Standard Penetration Test; N - Number of blows.
6. Install details: 50mm plain pipe concrete raised cover from 0.00m begl to 2.00m begl; Bentonite seal between 0.20m begl to 2.00m begl; 50mm slotted pipe with gravel between 2.00m begl to 10.00m begl.

Groundwater

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
	3.00 12.00		

All dimensions in metres
Scale 1:78.125

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site: Halterworth Lane, Romsey

BH2

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 31-10-23 Finish 01-11-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Well	Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
					0.20			Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
								Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
		3.00	SPT	N=19	3.00			
					3.60			Stiff yellow slightly silty sandy CLAY. Sand is fine to coarse. [Head]
	▽							Medium dense dark bluish grey silty very clayey fine to coarse SAND. [Earnley Sand Formation]
					5.00			Dense grey silty very cleyey fine to coarse SAND. [Earnley Sand Formation]
		6.00	SPT	N=31				
	▽	9.00	SPT	N=33				
		10.50	SPT	N=42	10.50			Borehole completed at 10.50m.
					{12.50}			

0 1 2 3 4 5 6 7 8 9 10 11 12

General Remarks

1. Hand excavated inspection pit from ground level to 1.00m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not encoutered.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Backfilled with arisings

Groundwater

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
	4.00 9.00	4.20	

All dimensions in metres
Scale 1:78.125

Logged By: RF

Enzygo Ltd
Tel: 01454 269237
Fax: 01454 269760
Web: www.enzygo.com

Site: Halterworth Lane, Romsey

BH3

Job No	Dates	Ground Level (m)	Co-Ordinates
SHF.1132.258	Start 30-10-23 Finish 31-10-23		

Client: Gladman Develpoments

Sheet: 1 of 1

Well	Water Levels	Samples & In Situ Testing: Depth (m)	No/Type	Results	Depth (m)	Level (mAD)	Legend	Stratum Description
					0.30			Grass over brown slightly silty slightly sandy slightly gravelly TOPSOIL. Gravel is angular to subangular fine to medium of sandstone and flint. Sand is fine to coarse.
								Brown slightly clayey very sandy angular to subangular fine to coarse GRAVEL of flint and sandstone. Sand is fine to coarse. [River Terrace Deposits]
		3.00	SPT	N=19				
	▽				3.40			Stiff yellow slightly silty sandy CLAY. Sand is fine to coarse. [Head]
					4.70			Medium dense dark bluish grey silty very clayey fine to coarse SAND. [Earnley Sand Formation]
		6.00	SPT	N=19	6.20			Dense grey silty very clayey fine to coarse SAND. [Earnley Sand Formation]
	▽	9.00	SPT	N=31				
		12.00	SPT	N=34	12.00			Borehole completed at 12.00m.
					{12.50}			

0 1 2 3 4 5 6 7 8 9 10 11 12

General Remarks

1. Hand excavated inspection pit from ground level to 1.00m begl.
2. D - Disturbed Sample; ES - Environmental Sample; B - Bulk Sample.
3. Densities and soil consistencies are based on insitu tests.
4. No visual or olfactory evidence of contamination observed.
5. Groundwater was not encoutered.
6. SPT - Standard Penetration Test; N - Number of blows.
7. Install details: 50mm plain pipe concrete flush cover from 0.00m begl to 1.00m begl; Bentonite seal between 0.20m begl to 1.00m begl; 50mm slotted pipe with gravel between 1.00m begl to 3.00m begl.

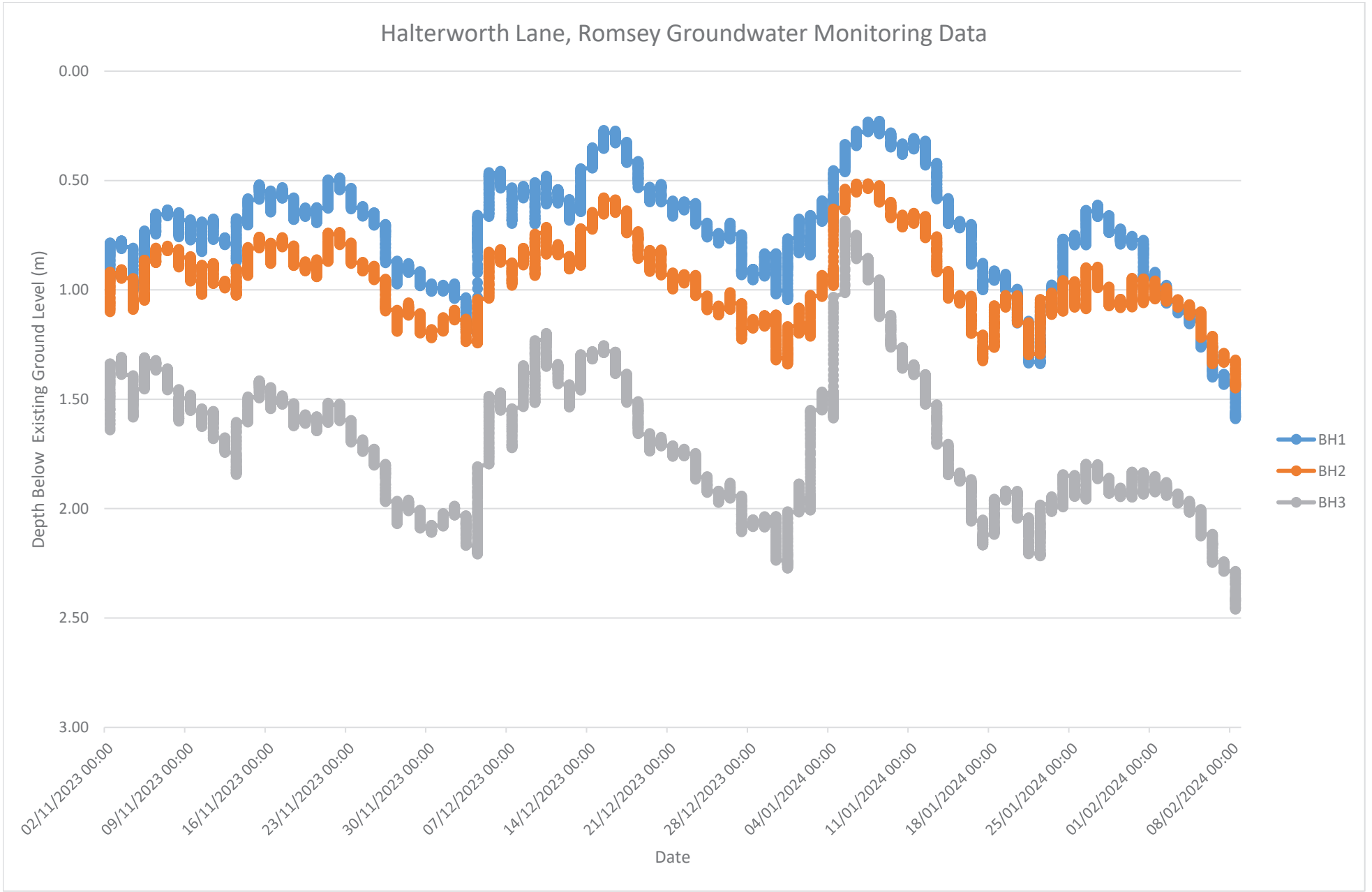
Groundwater

Date	Strike Depth (m)	Casing Depth (m)	Depth After Observation (m)
	4.00 9.20	4.00	

All dimensions in metres
Scale 1:78.125

Logged By: RF

Appendix 4
Groundwater Monitoring Graph

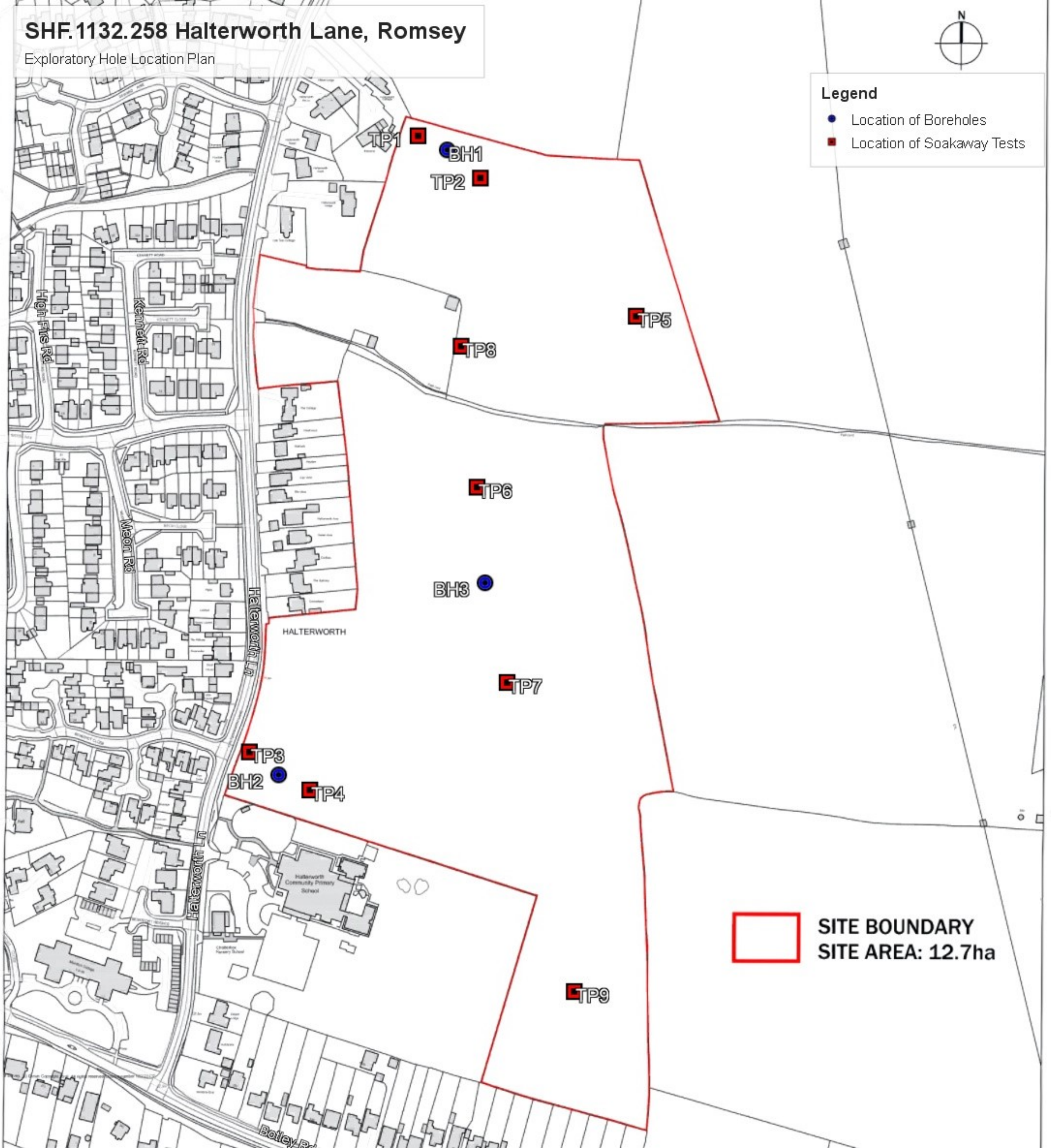

Halterworth Lane, Romsey Groundwater Monitoring Data
Depth Below Existing Ground Level (m)
0.00
0.50
1.00
1.50
2.00
2.50
3.00
02/11/2023 00:00
09/11/2023 00:00
16/11/2023 00:00
23/11/2023 00:00
30/11/2023 00:00
07/12/2023 00:00
14/12/2023 00:00
21/12/2023 00:00
28/12/2023 00:00
04/01/2024 00:00
11/01/2024 00:00
18/01/2024 00:00
25/01/2024 00:00
01/02/2024 00:00
08/02/2024 00:00
Date
BH1
BH2
BH3

Appendix 5

Exploratory Hole Location Plan

SHF.1132.258 Halterworth Lane, Romsey

Exploratory Hole Location Plan



Appendix 6
Mineral Planning Policy 15

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' [(77)] 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'[(78)].

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.

77 National Planning Policy Framework, paragraph 145 (DCLG, 2012)
78 National Planning Policy Framework, paragraph 143 (DCLG, 2012)

6.15 The key safeguarded mineral resources in Hampshire are sharp sand and gravel, soft sand and silica sand. Hampshire also has resources of clay, some of which plays an important role in supplying two local brickworks at Michelmersh and Selborne. Therefore, these resources are also safeguarded. The MSA covering these resources is based on local knowledge and information published by the British Geological Survey (BGS)[79] and other data and information available to the Hampshire Authorities[80]. The identification of the MSA includes all existing sand and gravel and brick-making clay workings in Hampshire.

6.16 Other minerals in Hampshire include chalk, oil and gas as well as other types of non brick-making clay. Hampshire's existing chalk and oil and gas developments are safeguarded and this is considered under *Policy 16 (Safeguarding – minerals infrastructure)*. Non brick-making clay and oil and gas resources are not included within the MSA because:

- non brick-making clay is not required to meet the need of Hampshire's local brick-works;
- chalk is a plentiful resource in Hampshire so safeguarding is not required. The demand and markets for chalk are also considered to be limited and evidence suggests that this is unlikely to change within the Plan period; and
- oil and gas resources are an unknown quantity. The exploration and production licenced areas, granted by the Government are only an indication of Hampshire's potential oil and gas resources. The exploration and production of oil takes place at such a depth, that other developments, except where there are surface installations, will not sterilise the resource. Safeguarding of oil and gas resources is therefore considered to be unnecessary.

6.17 Hampshire also has deposits of Malmstone and Clunch. Malmstone is a hard chalk/sandstone which has been used as local construction material in and around Alton, Selborne and Petersfield. Clunch is a similar material comprising hard chalk/clay bedded in mortar for walls. These resources have not been identified or worked for over half a century and there is no evidence to suggest that it is sourced in Hampshire other than recycling from old buildings. As a result, Malmstone and Clunch is not included in the MSA.

6.18 National planning policy requires MPAs to define Minerals Consultation Areas (MCA) based on the defined MSA[81] . The Town and Country Planning Act 1990 places a requirement on a Local Planning Authority (LPA) to consult with the MPA (the relevant Hampshire Authority) on development in an area, which they have been notified as being within the MCA by the MPA, that could affect or be affected by mineral working[82].

6.19 The MCA is published by Hampshire County Council and published separately to this Plan[83]. The MCA covers the Hampshire County Council area and small adjacent parts of the cities. It is based on the MSA. The MCA covers the:

- mineral resources in the MSA that are considered to be 'commercially viable' mineral deposits;
- minerals and waste sites allocated in the Plan; and
- minerals and waste infrastructure identified for safeguarding through policies *16 (Safeguarding - mineral infrastructure* and *26 (Safeguarding - waste infrastructure)* and as set out in 'Appendix B - List of safeguarded minerals and waste sites' and thereafter any updates to this list.

79 Minerals Safeguarding in England: Good Practice Advice (BGS, 2011)
80 Hampshire Safeguarding Study, section 5
81 National Planning Policy Framework, paragraph 143 (DCLG, 2012)
82 Town and Country Planning Act 1990, paragraph 7 of schedule 1
83 Minerals Consultation Area (Hampshire County Council, date upon issue of the MCA)

6.20 The MCA is sent to district and borough council's and requires them to consult the MPA when any development proposal comes forward within the MCA. MCAs should be reflected in district and borough local plans. Where proposals are located in the MCA, discussions should take place with the relevant MPA prior to a submission of interest to potentially develop a site, to establish further information on the mineral potential of the site. Where a planning application is made for non-mineral development within the MCA, the district or borough council should consult the relevant MPA on the application. Any non mineral proposal falling within the MCA will require exploratory work prior to its development, in order to investigate further the mineral resource that may be present and the potential for its extraction. The MCA will be updated as required in the Plan period and district and borough councils will be informed of any updates.

6.21 Soft sand resources in east Hampshire have been extracted for a number of years. These resources may have the potential for silica sand. However, the Plan does not identify any further extraction in this area, beyond the currently permitted reserves. There are known viable resources of soft sand (with the potential for silica sand) which have not previously been extracted, located in the area identified by East Hampshire District Council and its partners for the Whitehill & Bordon Eco-town. The resources in this location are therefore subject to known development pressure and will be protected from permanent sterilisation unless any non minerals development proposal can satisfy criteria a to d in *Policy 15 (Safeguarding – mineral resources)*. The site specific development proposals of the Eco-town development are set out in the Master Plan approved by East Hampshire District Council[(84)]. The resources may provide an additional opportunity for extraction continuing a supply of soft sand or silica sand from this part of Hampshire, where it is a scarce resource, through appropriate prior extraction. Prior extraction of the resources at Whitehill & Bordon will be encouraged as part of the delivery of the Eco-town but will only proceed as long as it does not impede the Eco-town development and phasing. These resources may also provide an opportunity for the provision of an on site supply of mineral for use in the Eco-town's development.

Safeguarding mineral infrastructure

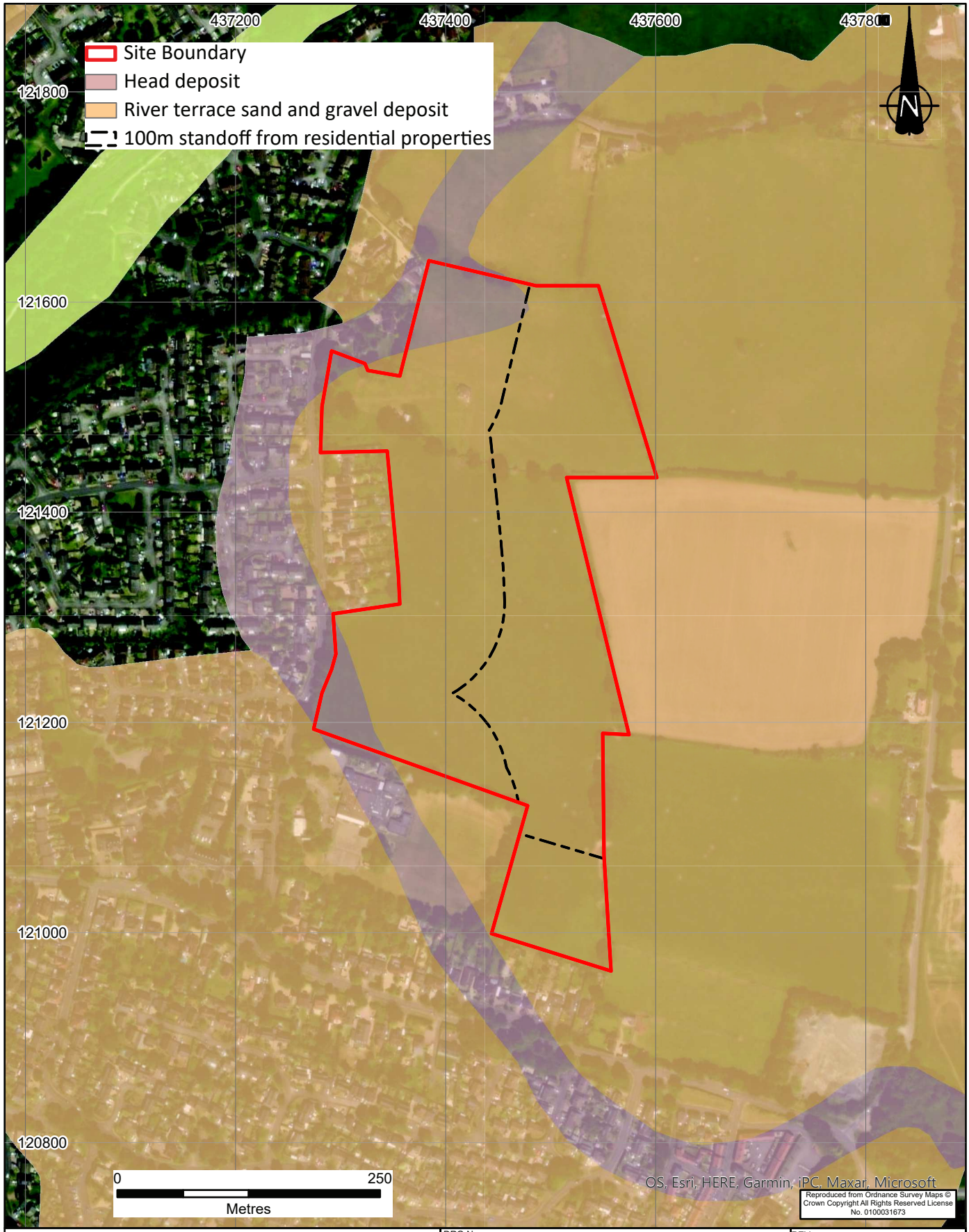
6.22 Safeguarding the infrastructure that supports the supply of minerals is just as important as safeguarding mineral resources. Safeguarding minerals infrastructure is a requirement of national planning policy[(85)] which states that the following should be safeguarded:

- existing, planned and potential rail heads, rail links to quarries, wharfage and associated storage, handling and processing facilities for the bulk transport by rail, sea or inland waterways of minerals, including recycled, secondary and marine-dredged materials; and
- existing, planned and potential sites for concrete batching, the manufacture of coated materials, other concrete products and the handling, processing and distribution of substitute, recycled and secondary aggregate material.

84 East Hampshire District Local Plan: Joint Core Strategy – Submission Stage, Whitehill & Bordon Strategic Allocation (East Hampshire District Council and South Downs National Park Authority, 2012) Adopted Whitehill & Bordon Eco-town Master Plan (Revised May 2012)

85 National Planning Policy Framework, paragraph 143 (DCLG, 2012)

DRAWINGS



CLIENT: GLADMAN DEVELOPMENTS LTD	DRG No: ST20570-001		REV: A
PROJECT: LAND OFF HALTERWORTH LANE, ROMSEY	SIZE: A4	SCALE: 1:5,000	DATE: 25/08/2023
	DRAWN BY: BVC	CHECKED BY: SDB	APPROVED BY: SDB
DRAWING TITLE: SUPERFICIAL GEOLOGY			

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