

Via Email only: andrew@wessexep.co.uk

Wessex Environmental Planning Ltd
74 Baynard Avenue
Flitch Green
Dunmow
Essex
CM6 3FD

FAO: Andrew Blackwell

Friday 12th July 2019

Our Ref: GWPR3240 (*DRAFT*)

Dear Andrew,

Site: Land to the West of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP

We are writing with regard to whether the proposed development at the above site contains economic minerals deposits in exploitable quantities.

Site Location and Description

The site comprised a 6.2ha approximately rectangular shaped plot of land, orientated in a west to east direction, located on the northern side of Bartons Road, to the west/south-west of Spire Portsmouth Hospital. The site was located to the north-east of Havant, north of Emsworth.

The site comprised an open undeveloped field used for arable farming, a tarmac access road to The Oaks Havant Crematorium was noted along the eastern boundary of the site.

The national grid reference for the centre of the site was approximately SU 73357 08113. A site location plan can be seen in Figure 1 with the site development area shown in Figure 2. An aerial view of the site, showing an approximate site boundary, is given within Figure 3.

Proposed Development

At the time of reporting, July 2019, it was understood the proposed development will comprise the construction of up to 72No. new residential properties with private soft landscaped gardens and parking areas. The proposed development also involves the retaining of an area of the site as public open space / green infrastructure including a community orchard. A plan of the proposed development can be seen in Figure 4.

Geological Mapping

The geology map of the British Geological Survey of Great Britain (Sheet No. 316) of the Fareham area revealed the east of the site to be located on superficial Head Deposits underlain by bedrock deposits of the London Clay Formation. In the west of the site the superficial Head Deposits were not present. No areas of worked or Made Ground were identified within a 250m radius of the site.

Head Deposits – Portsmouth Area

Broad sheet like deposits composed mainly of angular flint gravel set in a sandy clay matrix, sometimes containing chalk. The head gravel is thickest (5 – 7m thick) nearer the old cliff line at the north of the outcrop, and becoming thinner and finer grained south-wards. The head gravel is regarded as the product of solifluction of Chalk, Palaeogene deposits of clay-with-flints down the dip slope to the South Downs during the cold phases of the Quaternary.

London Clay Formation – Hampshire Basin

In the Hampshire Basin area the London Clay Formation comprises blue, brown and grey clay with yellow and grey sands and silts interspersed with pebble beds. Localised developments of sandstone also occur. Concretions of argillaceous limestone in nodular form (Claystones) occur throughout the formation. Crystals of Gypsum (Selenite) are often found within the weathered part of the London Clay Formation, and precautions against sulphate attack to concrete are sometimes required. The basement beds of the London Clay Formation are sandy with rounded flints.

Hampshire Minerals and Waste Plan

The site at land to the West of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP is understood to be within a Minerals and Waste Consultation Area (MWCA) and is designated as MWCA Superficial Soft Sand and Gravel. It is understood that this relates to the Superficial Head Deposits shown to be present over the eastern half of the site from BGS mapping.

The '*Minerals & Waste Safeguarding in Hampshire: Supplementary Planning Document (2016)*' states the following:

"The MSA and MWCA layers are based on BGS data, most of which can be found on their website, including scans of borehole information that the BGS holds. This data is meant to be used at a 1:50,000 scale which means it can only give an indication that mineral is likely to be present. Therefore, the developer will need to undertake exploratory work to locally test the extent of the mineral"

Site Investigation

Site works were undertaken on the 23rd March 2018 and comprised the excavation of 5No. Trial Pits to a depth of between 1.70 – 3.00m bgl.

A further site investigation was undertaken on the 8th May 2018 and comprised the drilling of 5No. Terrier Windowless Sample Boreholes (WS1 – WS5) to a depth of 3.00m bgl.

The location of the trial holes can be seen within Figure 5. As the site is ~6.2 hectares and 10No. trial holes were undertaken, this gives a density of approximately one trial hole per ~6,200m².

Encountered Geology

For the purposes of discussion, the succession of conditions encountered in the trial holes (WS1 – WS5 & TP1 – TP5) in descending order can be broadly summarised as follows:

Topsoil (All trial holes)
Head Deposits (All Trial Holes)
London Clay Formation (WS1 & WS3 - WS5)

Topsoil

Topsoil was recorded from ground level, in all trial holes, to depths of between 0.30 - 0.40m bgl. The Topsoil generally comprised dark brown/brown gravelly sand. The sand was fine to coarse grained. The gravel was occasional to abundant, fine to coarse, sub-angular to sub-rounded flint.

Head Deposits

Soils described as Head Deposits were encountered in all the trial holes underlying the Topsoil to proved depths of between 0.60 – 1.50m bgl within WS1 & WS3 - WS5 and to the base of the remaining trial holes, depths of between 1.70m – 3.00m bgl. The soils of the Head Deposits comprised a combination of granular and cohesive soils.

The granular soils of the Head Deposits were encountered within TP1 – TP4 underlying the Topsoil to proved depths of 1.50m bgl within TP2 – TP4 and to the base of TP1 at 2.30m bgl. These deposits comprised a light brown sandy locally clayey gravel. The sand was fine to coarse grained. The gravel was abundant, fine to very coarse sub-angular to sub-rounded flint.

The cohesive soils of the Head Deposits were encountered within all the trial holes except TP1, underlying the granular Head Deposits within TP2 – TP4 and underlying the Topsoil within TP5 and WS1 – WS5. The cohesive Head Deposits were encountered to a proved depth of between 0.60 – 1.50m bgl within WS1 & WS3 - WS5 and to the base of the remaining trial holes, depths of between 1.70m – 3.00m bgl. These soils generally comprised a brown/orange locally mottled red and grey sandy gravelly clay. Sand was fine to coarse grained. Gravel was rare to abundant, fine to very coarse, sub-angular to sub-rounded flint.

London Clay Formation

Soils described as the London Clay Formation were encountered within WS1 and WS3 – WS5 underlying the cohesive soils of the Head Deposits to the base of the trial holes at depths of 3.00m bgl. These soils generally consisted of brown, orange and grey mottled locally gravelly sandy silty clay. The sand was fine grained. The gravel was rare, fine to coarse, sub-angular to sub-rounded flint.

For further details of the composition of the Topsoil as well as detailed description of the natural soils, reference must be made to the trial hole logs within Appendix B.

Discussion

Policy 15 of the 'Hampshire Minerals and Waste Plan (2013)' restricts development in Minerals Safeguarding Areas (MSAs) or Minerals and Waste Consultation Areas (MWCAs) without the prior extraction of mineral resources unless the one of the following can be demonstrated:

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

It is considered that the sterilisation of mineral resources onsite will be negligible for the following reasons:

- Based on the results of the site investigation, the only soils onsite which could be considered a mineral resource are the granular soils of the Head Deposits, which could potentially provide a resource of sharp sand and gravel aggregate.

However, these soils were only encountered within TP1 – TP4, which were located with the eastern portion of the site. Figure 6 shows the portion of the site where the granular soils of the Head Deposits considered to be present based on the results of the site investigation.

- The thickness of the granular Head Deposits was limited to 1.10 – 1.20m within TP2 – TP4, with only TP1 showing any significant thickness, with the granular soils present to the base of the trial hole, giving a minimum thickness of 2.05m.

Figure 6 shows the area where the granular Head Deposits are located overlain on the proposed development. This shows that only the southern half of the area where the granular Head Deposits are present is actually undergoing development. This is the region where the thickness of the granular deposits was limited to 1.10 – 1.20m, the northern region where the thickness increased to >2.05m is remaining undeveloped, as it is intended to be used as a community orchard.

- Sections 4.13 - 4.16 of the '*Minerals & Waste Safeguarding in Hampshire: Supplementary Planning Document (2016)*', state that a 3ha threshold is used to reduce the number of planning applications that need consultation with the Minerals and Waste Planning Authority (MWPA). This is due to smaller sites not being viable for mineral extraction. Although the whole site is 6.2ha, the eastern area of site where potential mineral resources were encountered was limited to ~2.2ha. Due to the limited thickness and distribution of the granular Head Deposits onsite, it is considered unlikely that the volume of sand and gravel present on site will make mineral extraction viable.
- It is understood that during development, any useable sand or gravel aggregates excavated during development (e.g. foundation excavations) will be recycled for use within the development and therefore will not be sterilised. This is as per Policy 18 of the '*Hampshire Minerals and Waste Plan (2013)*' and is something that is encouraged with section 3.11 of the '*Minerals & Waste Safeguarding in Hampshire: Supplementary Planning Document (2016)*'.

Another consideration is the presence of the crematorium directly north of the north-eastern corner of the site, as well as the hospital ~50m to the east of the site. It could be considered inappropriate to have mineral extraction adjacent to the crematorium and its access road. The extraction of aggregates in the eastern portion of the site and the associated noise/traffic could cause disruption to the normal function of the crematorium and the hospital.

Conclusion

Based on the findings of the ground investigation undertaken onsite, it is considered that the no unactable sterilisation of mineral resources will be caused by the development. This is due to the limited area/thickness of sands and gravels present (unlikely to be economically viable for mineral extraction) and the fact that if any useable aggregates are encountered, they will be recycled for use in the development

Therefore, it is considered that the proposed development will not conflict with the Hampshire County Councils Policy of Mineral Safeguarding.

Please feel free to contact us should you have any queries regarding the information enclosed within this letter.

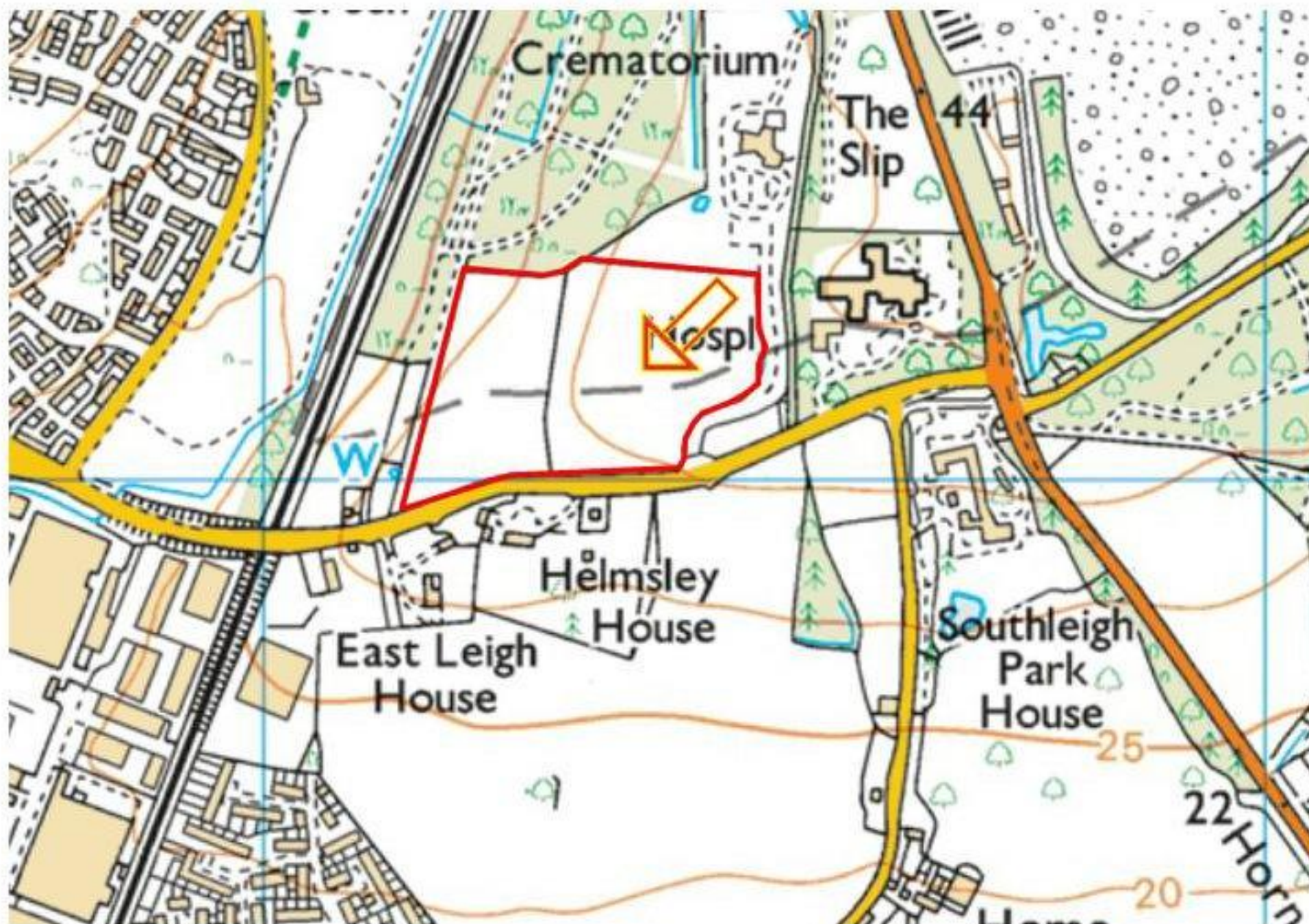
Yours sincerely,



Mr Robin Gledhill
Geotechnical & Geo-Environmental Engineer
For and on behalf of Ground and Water Limited

The following Figures and Appendices finalise this report;

Figure 1	Site Location Plan
Figure 2	Site Development Area
Figure 3	Aerial View of Site
Figure 4	Proposed Development Plan
Figure 5	Trial Hole Location Plan
Figure 6	Location of Granular Head Deposits
Appendix A	Conditions and Limitations
Appendix B	Trial Hole Logs



APPROXIMATE SITE BOUNDARY

NOT TO SCALE

Project:

Land to the west of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP

Client:

Wessex Environmental Planning Ltd

Date:

July 2018

Ref:

GWPR3240

Site Development Area

Figure 1

ground&water



APPROXIMATE SITE BOUNDARY

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Site Development Area

Figure 2

ground&water



APPROXIMATE SITE BOUNDARY

NOT TO SCALE

Project:

Land to the west of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP

Client:

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July 2019

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Aerial View of Site

Figure 3

ground&water



Project:		Figure 4 ground&water
Land to the west of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP		
Client:	Wessex Environmental Planning Ltd	
Date:	July 2019	
Ref:	GWPR3240	
Proposed Development Plan		



□ = Trail Hole location

NOT TO SCALE

Project:

Land to the west of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP

Client:

Wessex Environmental Planning Ltd

Date:

July 2019

Ref:

GWPR3240

Trial Hole Location Plan

Figure 5

ground&water



 = Area where granular Head Deposits are present

 = Trail Hole location (thickness of Granular Head Deposits)

NOT TO SCALE

Project:

Land to the west of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP

Client:

Wessex Environmental Planning Ltd

Date:

July 2019

Ref:

GWPR3240

Location of Granular Head Deposits

Figure 6

ground&water

APPENDIX A

Conditions and Limitations

The ground is a product of continuing natural and artificial processes. As a result, the ground will exhibit a variety of characteristics that vary from place to place across a site, and also with time. Whilst a ground investigation will mitigate to a greater or lesser degree against the resulting risk from variation, the risks cannot be eliminated.

The report has been prepared on the basis of information, data and materials which were available at the time of writing. Accordingly, any conclusions, opinions or judgements made in the report should not be regarded as definitive or relied upon to the exclusion of other information, opinions and judgements.

The investigation, interpretations, and recommendations given in this report were prepared for the sole benefit of the client in accordance with their brief; as such these do not necessarily address all aspects of ground behaviour at the site. No liability is accepted for any reliance placed on it by others unless specifically agreed in writing.

Any decisions made by you, or by any organisation, agency or person who has read, received or been provided with information contained in the report ("you" or "the Recipient") are decisions of the Recipient and we will not make, or be deemed to make, any decisions on behalf of any Recipient. We will not be liable for the consequences of any such decisions.

Current regulations and good practice were used in the preparation of this report. An appropriately qualified person must review the recommendations given in this report at the time of preparation of the scheme design to ensure that any recommendations given remain valid in light of changes in regulation and practice, or additional information obtained regarding the site.

Any Recipient must take into account any other factors apart from the Report of which they and their experts and advisers are or should be aware. The information, data, conclusions, opinions and judgements set out in the report may relate to certain contexts and may not be suitable in other contexts. It is your responsibility to ensure that you do not use the information we provide in the wrong context.

This report is based on readily available geological records, the recorded physical investigation, the strata observed in the works, together with the results of completed site and laboratory tests. Whilst skill and care has been taken to interpret these conditions likely between or below investigation points, the possibility of other characteristics not revealed cannot be discounted, for which no liability can be accepted. The impact of our assessment on other aspects of the development required evaluation by other involved parties.

The opinions expressed cannot be absolute due to the limitations of time and resources within the context of the agreed brief and the possibility of unrecorded previous in ground activities. The ground conditions have been sampled or monitored in recorded locations and tests for some of the more common chemicals generally

expected. Other concentrations of types of chemicals may exist. It was not part of the scope of this report to comment on environment/contaminated land considerations.

The conclusions and recommendations relate to Land to the West of Spire Portsmouth Hospital, Bartons Road, Havant, Hampshire PO9 5NP.

Trial hole is a generic term used to describe a method of direct investigation. The term trial pit, borehole or window sampler borehole implies the specific technique used to produce a trial hole.

The depth to roots and/or of desiccation may vary from that found during the investigation. The client is responsible for establishing the depth to roots and/or of desiccation on a plot-by-plot basis prior to the construction of foundations. Where trees are mentioned in the text this means existing trees, recently removed trees (approximately 15 years to full recovery on cohesive soils) and those planned as part of the site landscaping.

Ownership of copyright of all printed material including reports, laboratory test results, trial pit and borehole log sheets, including drillers log sheets, remain with Ground and Water Limited. Licence is for the sole use of the client and may not be assigned, transferred or given to a third party.

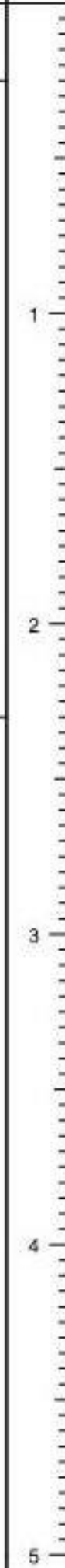
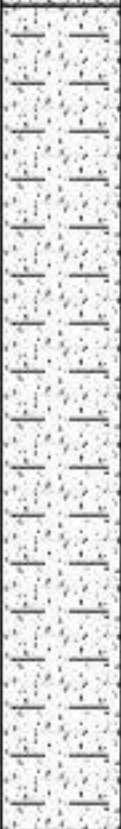
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APPENDIX B

Trial Hole Logs

Trial Pit Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 23/03/2018	
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:		
Project No. : GWPR3240		Crew Name:		Equipment:
Location Number TP1	Location Type TP	Level	Logged By JH	Scale 1:25
				Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.05	D		0.25			TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	
		0.30	D					HEAD DEPOSITS: Light brown sandy clayey GRAVEL. Sand is fine to coarse grained. Gravel is abundant, fine to very coarse, sub-angular to sub-rounded flint.	
		0.50	D						
		0.80	D						
		1.00	D						
		1.50	D						
		2.00	D						
2.30	D	2.30	End of Borehole at 2.300m						

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks Roots noted to 0.30m bgl.	
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Project Name: Land to the West of Spire Portsmouth Hospital			Client: Wessex Environmental Planning Ltd			Date: 23/03/2018			
Location: Bartons Road, Havant, Hampshire PO9 5NP			Contractor:						
Project No. : GWPR3240			Crew Name:			Equipment:			
Location Number TP2		Location Type TP		Level		Logged By JH		Scale 1:25	Page Number Sheet 1 of 1
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D		0.30			TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	1 -
		0.50	D					HEAD DEPOSITS: Gravelly SAND. Sand is fine to coarse grained. Gravel is abundant, fine to medium, sub-angular to sub-rounded flint.	
		0.80	D						
		1.00	D						
		1.50	D		1.50				
1.70	D		1.70						
End of Borehole at 1.700m									2 -
									3 -
									4 -
									5 -
Dimensions		Trench Support and Comment				Pumping Data			
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks			Date	Rate	Remarks
Remarks									
Roots noted to 0.30m bgl.									

Trial Pit Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 23/03/2018	
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:		
Project No. : GWPR3240		Crew Name:		Equipment:
Location Number TP3	Location Type TP	Level	Logged By JH	Scale 1:25
				Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D		0.40			TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	1
		0.50	D					HEAD DEPOSITS: Light brown sandy GRAVEL. Sand is fine to coarse grained. Gravel is abundant, fine to very coarse, sub-angular to sub-rounded flint.	
		0.80	D						
		1.00	D		1.50			HEAD DEPOSITS: Brown/orange sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	
		1.50	D						
		2.00	D						
2.50	D	3.00							
3.00	D								
		End of Borehole at 3.000m							3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks Roots noted to 0.40m bgl.							
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Trial Pit Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 23/03/2018	
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:		
Project No. : GWPR3240		Crew Name:		Equipment:
Location Number TP4	Location Type TP	Level	Logged By JH	Scale 1:25
				Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D		0.40			TOPSOIL: Dark brown gravelly sand. Sand is fine to coarse grained. Gravel is occasional to abundant, fine to medium, sub-angular to sub-rounded flint.	1
		0.50	D					HEAD DEPOSITS: Brown sandy GRAVEL. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	
		0.80	D					HEAD DEPOSITS: Light brown/orange sandy clayey GRAVEL. Sand is fine to coarse grained. Gravel is abundant, fine to very coarse, sub-angular to sub-rounded flint. Becoming more clayey at 1.00m bgl.	
		1.00	D		1.50				
		1.50	D					HEAD DEPOSITS: Red/orange gravelly CLAY. Gravel is occasional to abundant, fine to coarse, sub-angular to sub-rounded flint.	
		1.70	D		1.70			End of Borehole at 1.700m	2
									3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks Roots noted to 0.40m bgl.	
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Trial Pit Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 23/03/2018	
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:		
Project No. : GWPR3240		Crew Name:		Equipment:
Location Number TP5	Location Type TP	Level	Logged By JH	Scale 1:25
				Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			TOPSOIL: Dark brown gravelly sand. Sand is fine to coarse grained. Gravel is occasional to abundant, fine to medium, sub-angular to sub-rounded flint.	
		0.30	D					HEAD DEPOSITS: Brown gravelly CLAY. Gravel is abundant, fine to very coarse, sub-angular to sub-rounded flint.	
		0.50	D						
		0.80	D		0.80				
		1.00	D					HEAD DEPOSITS: Orange/grey very gravelly CLAY. Gravel is abundant, fine to very coarse, sub-angular to sub-rounded flint.	1
		1.50	D						
		2.00	D						2
		2.30			2.30				
		2.50	D					LONDON CLAY FORMATION: Brown mottled grey slightly gravelly CLAY. Gravel is rare to occasional, fine to coarse, sub-angular to sub-rounded flint.	
		2.80	D		2.80			End of Borehole at 2.800m	3
									4
									5

Dimensions		Trench Support and Comment			Pumping Data		
Pit Length	Pit Width	Pit Stability	Shoring Used	Remarks	Date	Rate	Remarks

Remarks Roots noted to 1.00m bgl.	
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Percussion Drilling Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 08/05/2018	
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:		
Project No. : GWPR3240		Crew Name:		Drilling Equipment:
Borehole Number WS1	Hole Type WLS	Level	Logged By JH	Scale 1:50
				Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D		0.30			TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	1
		0.50	D		0.70			HEAD DEPOSITS: Brown/orange sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	
		0.80	D		1.50			LONDON CLAY FORMATION: Brown/orange sandy silty CLAY. Sand is fine grained.	
		1.50	D		2.50			LONDON CLAY FORMATION: Brown orange grey mottled CLAY.	2
		2.50	D		3.00			End of Borehole at 3.000m	3
									4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	3.00	90	0

Remarks No groundwater encountered. Roots noted to 1.00m bgl.	
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Percussion Drilling Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 08/05/2018
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:	
Project No. : GWPR3240		Crew Name:	Drilling Equipment:
Borehole Number WS2	Hole Type WLS	Level	Logged By JH
		Scale 1:50	Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D		0.30			TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	1
		0.50	D					HEAD DEPOSITS: Brown/orange sandy gravelly	
		0.80	D					CLAY. Sand is fine to coarse grained. Gravel is very abundant, fine to coarse, sub-angular to sub-rounded flint.	2
		1.50	D						
		2.50	D						
					3.00			End of Borehole at 3.000m	3
									4
									5
									6
									7
									8
									9
									10

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	3.00	90	0

Remarks	
No groundwater encountered. Roots noted to 0.30m bgl.	

Percussion Drilling Log

Project Name: Land to the West of Spire Portsmouth Hospital				Client: Wessex Environmental Planning Ltd				Date: 08/05/2018			
Location: Bartons Road, Havant, Hampshire PO9 5NP				Contractor:							
Project No. : GWPR3240				Crew Name:				Drilling Equipment:			
Borehole Number WS3		Hole Type WLS		Level		Logged By JH		Scale 1:50		Page Number Sheet 1 of 1	

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.30	D		0.25		TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint. HEAD DEPOSITS: Brown/orange sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint. LONDON CLAY FORMATION: Brown orange grey mottled CLAY.	1	
		0.50	D		0.60			2	
		0.80	D						
		1.50	D						
		2.50	D						
				3.00		End of Borehole at 3.000m	3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base (m)	Diameter (mm)	Depth Base (m)	Diameter (mm)	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation
								0.00	3.00	90	0

Remarks No groundwater encountered. Roots noted to 0.25m bgl.											
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Percussion Drilling Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 08/05/2018	
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:		
Project No. : GWPR3240		Crew Name:		Drilling Equipment:
Borehole Number WS4	Hole Type WLS	Level	Logged By JH	Scale 1:50
				Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.30	D		0.30			TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	1		
		0.50	D					HEAD DEPOSITS: Brown/orange sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.			
		0.80	D								
		1.30	D		1.50				2		
		1.80	D					LONDON CLAY FORMATION: Brown orange/grey mottled gravelly sandy CLAY. Sand is fine grained. Gravel is rare, fine to coarse, sub-angular to sub-rounded flint.			
		2.30	D								
		2.80	D		3.00				3		
End of Borehole at 3.000m									4		

Percussion Drilling Log

Project Name: Land to the West of Spire Portsmouth Hospital		Client: Wessex Environmental Planning Ltd	Date: 08/05/2018	
Location: Bartons Road, Havant, Hampshire PO9 5NP		Contractor:		
Project No. : GWPR3240		Crew Name:		Drilling Equipment:
Borehole Number WS5	Hole Type WLS	Level	Logged By JH	Scale 1:50
				Page Number Sheet 1 of 1

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description			
		Depth (m)	Type	Results							
		0.30	D		0.30			TOPSOIL: Brown gravelly sand. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.	1		
		0.50	D				HEAD DEPOSITS: Brown/orange sandy gravelly CLAY. Sand is fine to coarse grained. Gravel is abundant, fine to coarse, sub-angular to sub-rounded flint.				
		0.80	D								
		1.30	D				1.20	LONDON CLAY FORMATION: Brown orange/grey mottled gravelly sandy CLAY. Sand is fine grained. Gravel is rare, fine to coarse, sub-angular to sub-rounded flint.	2		
		1.50	D								
		1.80	D								
		2.30	D					3			
		2.80	D				3.00				
End of Borehole at 3.000m								4			