

September 9th 2019

YourEnvironment
Chilgrove Business Centre
Chilgrove
West Sussex
PO18 9HU

F.A.O Jent Estates Ltd

Re: 283-285a Chichester Road, Bognor Regis, PO21 5AH

We are writing to provide information regarding the results of the groundwater monitoring completed at the above-named site.

Introduction

In January 2019, Your Environment (YE) was commissioned by Jent Estates Ltd (the client) to undertake groundwater monitoring at the site located at 283-285a Chichester Road, Bognor Regis, PO21 5AH.

This letter report has been produced to describe the testing undertaken and to report on the results of groundwater monitoring. The purpose of this testing was to assess the status of any groundwater underlying the site.

Groundwater monitoring was conducted on four (4no.) occasions by a Geo-Environmental Engineer from YE from the windowless sampler borehole positions.

Geology

The relevant British Geological Survey (BGS) online mapping information indicates the site to be underlain by superficial deposits composed of River Terrace Deposits (sand silt and clay), with bedrock comprised of Lambeth Group (clay, silt and sand).

Fieldworks

The initial SI works were completed on February 6th 2019 by a Geo-Environmental Engineer from YE. In summary, the investigation included:

Windowless Sampler Boreholes

- A two-man team ascertained the routes of any below ground services in close proximity to the proposed exploratory hole positions, using a CAT scan and lifting up of any manhole covers. Following the CAT scan, hand dug starter pits were completed to a depth of 1.20 metres below ground level (mbgl).
- Three (3no.) windowless sampler boreholes (WS01 to WS03) were completed, by means of an Archway rig, to a maximum depth of 3.00mbgl. The locations of

exploratory positions were selected relative to the current proposed redevelopment plans for the site whilst providing a broad coverage of the site as feasibly as possible.

- The windowless sampler boreholes were logged with any groundwater conditions noted.
- All three boreholes (WS01 to WS03) were installed with a standpipe comprising of 50mm pipework to a maximum depth of 2.50mbgl to enable future groundwater monitoring to be undertaken. This was completed with a lockable cover, flush with the ground, to protect the installation.
- Upon completion, all exploratory holes were back filled, compacted and made good to existing levels and finishes, with any surplus spoil bagged up and removed from site.

The positions of exploratory holes in relation to the existing site layout can be reviewed within Appendix A and borehole logs are located in Appendix B.

Groundwater Monitoring

Four rounds of groundwater monitoring have been carried out, dated 18th February, 29th March, 18th April and 21st May 2019 using the standpipe installations of exploratory hole locations of WS01 to WS03.

A two phase dip meter was used to measure the depth of the groundwater and to determine the presence of Light Non Aqueous Phase Liquids (LNAPL) and Dense Non Aqueous Phase Liquids (DNAPL).

The monitoring results are presented in Appendix C.

Groundwater Conditions

Groundwater was encountered during the site works within WS01 at a depth of 1.45mbgl and within WS02 at a depth of 1.15mbgl. Groundwater was additionally encountered within all of the boreholes during the subsequent monitoring rounds, the results of which are presented in the table below.

Exploratory Hole	MON1 (mbgl)	MON2 (mbgl)	MON3 (mbgl)	MON4 (mbgl)
WS01	0.77	0.84	0.91	1.11
WS02	0.76	0.84	0.90	1.24
WS03	0.81	0.85	0.92	Not accessible

Table 1: Groundwater level recorded in installs

It should be noted that groundwater levels are dependent upon seasonal variations and can change after periods of prolonged rainfall or drought.

Yours sincerely,

Rachael Giles
Junior Geo-Environmental Engineer
rachael@yourenvironment.org

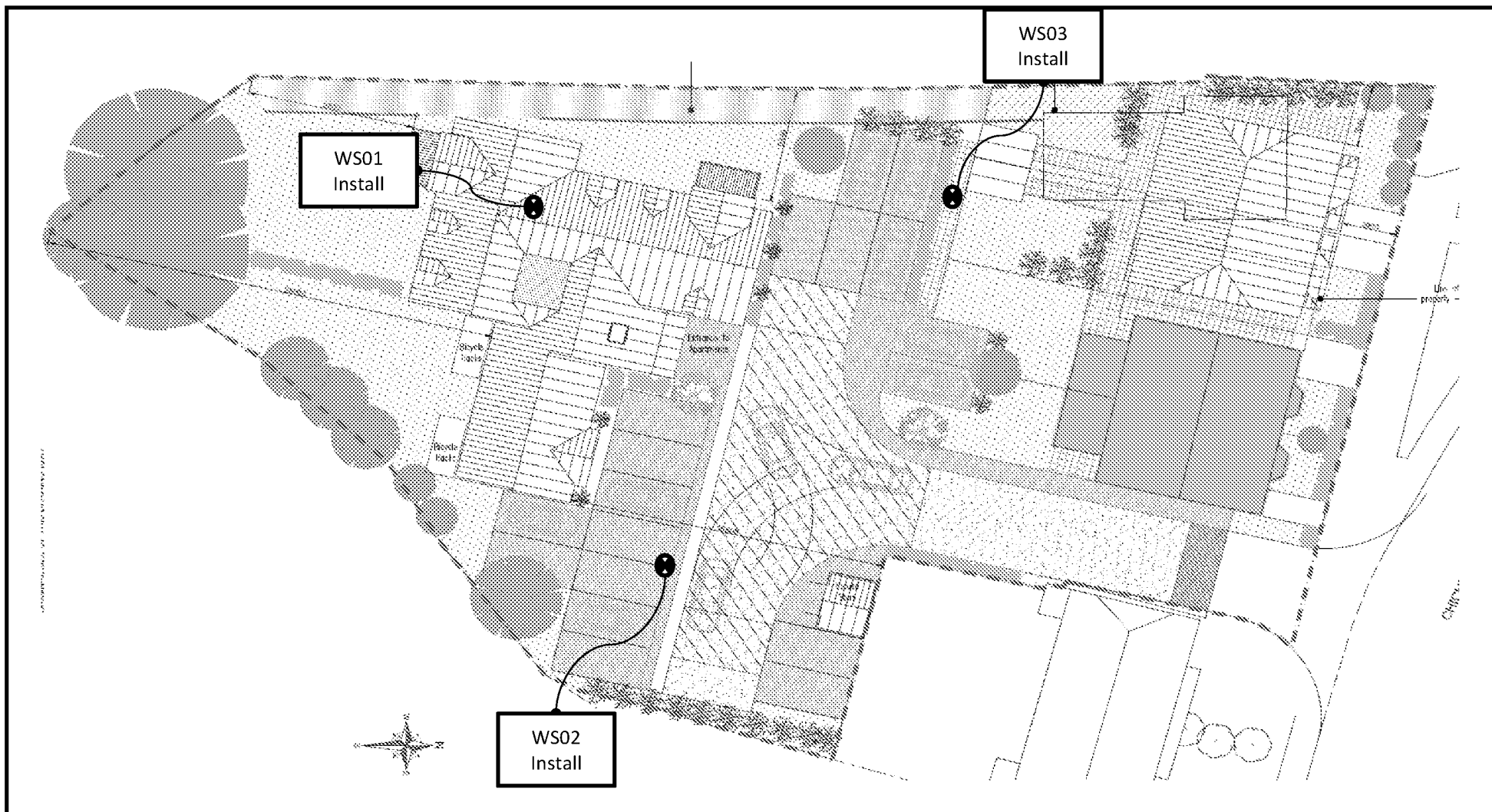
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Appendix A: Site investigation plan
Appendix B: Borehole logs
Appendix C: Monitoring results



APPENDIX A: Site Investigation Plan





Ground Investigation Location Plan - Not to Scale

YourEnvironment

Chilgrove Business Centre, Chilgrove, Nr Chichester, PO18 9HU

Tel: 01243 787150

Email: info@yourenvironment.org

Site Name:

283-285a Chichester Road, Bognor
Regis, PO21 5AH

Client:

Jent Estates Ltd

Date:

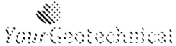
Feb-19

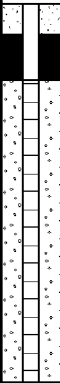
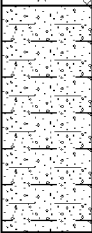
Job No:

YE6732

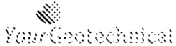
APPENDIX B: Borehole Logs

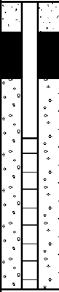


				Borehole Log				Borehole No. WS01 Sheet 1 of 1	
Project Name: 285-285a Chichester Road.				Project No. YE6732		Co-ords:		Hole Type WLS	
Location: Bognor Regis, PO21 5AH.				Level:		Scale 1:50			
Client: Jent Estates Ltd.				Dates: 06/02/2019		Logged By TJS			

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 1.00	C		0.43		 MADE GROUND: Grey and brown clayey, gravelly COBBLES. Gravel is fine to medium, angular to sub-angular of concrete, brick and mixed lithology. Cobbles are of concrete. Firm to soft light brown silty CLAY.	1	
		1.00 - 2.00	C		1.00				
		1.20	S	N=10 (2,2/2,2,3,3)			 Light brown clayey, gravelly SAND. Sand is fine to medium. Gravel is fine to medium, angular to sub-angular of flint and mixed lithology.	2	
		2.00	S	N=12 (2,3/3,2,3,4)	2.50				
End of Borehole at 2.50m								3	
								4	
								5	
								6	
								7	
								8	
								9	
								10	

Remarks Core recovery: 0-1m 90%, 1-2m 80%. Installation noted to 2.50m. Water strike at 1.45m. Borehole collapsed at 2.50m.		
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				Borehole Log				Borehole No. WS03 Sheet 1 of 1	
Project Name: 285-285a Chichester Road.				Project No. YE6732		Co-ords:		Hole Type WLS	
Location: Bognor Regis, PO21 5AH.				Level:		Scale 1:50			
Client: Jent Estates Ltd.				Dates: 06/02/2019		Logged By TJS			

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00 - 1.00	C		0.10		MADE GROUND: Dark brown clayey GRAVEL. Gravel is fine, sub-angular to sub-rounded of pea gravel. Light grey and dark greyish brown silty, sandy, gravelly CLAY. Sand is fine to medium. Gravel is fine to medium, sub-angular of concrete, ash and mixed lithology. Firm to soft silty CLAY. Orangish brown and grey gravelly SAND. Sand is fine to coarse. Gravel is fine to coarse, angular to sub-rounded of flint and mixed lithology.	   	
				0.45					
	1.00 - 2.00	C		1.00					
	1.20	S	N=6 (1,1/1,1,2,2)						
		2.00	S	N=48 (11,12/12,12,12,12)	2.00		End of Borehole at 2.00m		

Remarks Core recovery: 0-1m 80%, 1-2m 70%, 2-3m 100%. Installation noted to 1.90m.		
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APPENDIX C: Monitoring Results



YourEnvironment



JOB DETAILS:

Client: Jent Estates Ltd
Site: 283-285a Chichester Road, Bognor Regis

Job No: YE6732
Visit No: 1-4

Date:	18.02.19		29.03.19		18.04.19		21.05.19	
Monitoring Point	Water level (mbgl)	Depth of well (m)	Water level (mbgl)	Depth of well (m)	Water level (mbgl)	Depth of well (m)	Water level (mbgl)	Depth of well (m)
WS01	0.77	1.17	0.84	1.15	0.91	1.15	1.11	1.15
WS02	0.76	1.54	0.84	1.50	0.90	1.46	1.24	1.42
WS03	0.81	1.41	0.85	1.40	0.92	1.40	N/R	N/R
Max	0.77	1.54	0.84	1.50	0.91	1.46	1.24	1.42
Min	0.76	1.17	0.76	1.17	0.76	1.17	0.76	1.17

NR - Not recorded