

Ref: J25-007-R03

Date: 17th April 2025

FAO: Oliver Dempster

Highwood Homes Limited

The Hay Barn, Upper Ashfield

Hoe Lane, Romsey

SO51 9NJ

Dear Oliver,

Re: Groundwater Level Monitoring – Billingshurst

GCC was commissioned by Highwood Homes in January 2025 to undertake Groundwater monitoring (4 rounds, Jan 25 – Apr 25) of installed groundwater monitoring wells at the site. The locations of the installed monitoring wells are shown on Figure 1.

Geology:

Available geological maps for the area shows that the site/area overlies the bedrock geology of the Weald Clay Formation (mudstone and sandstone).

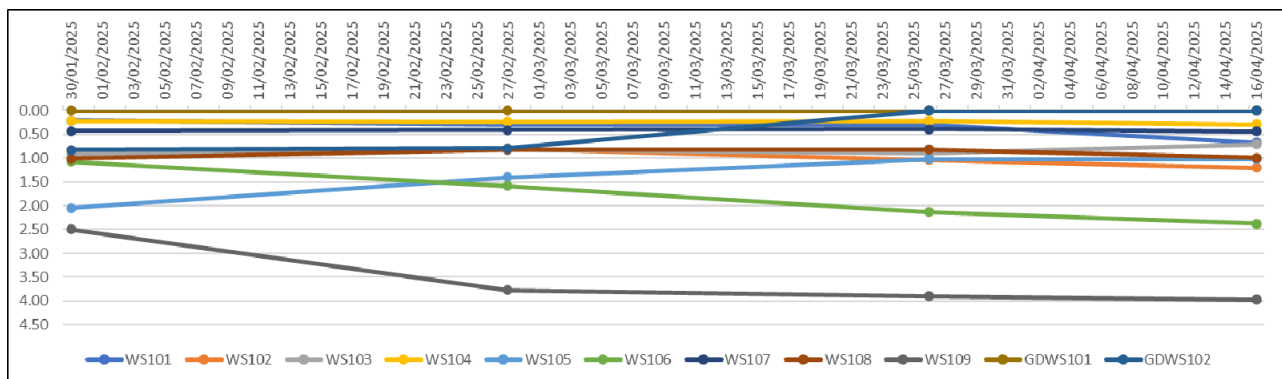
Well installation:

10no. windowless sample boreholes were drilled on the 23-24th January 2025 and groundwater monitoring wells were installed in all boreholes to depths of between 2.5mbgl and 5.0mbgl, comprising unslotted pipe with a bentonite seal from ground level to 1.0mbgl, thereafter slotted pipe to the base with a gravel filter pack.

The ground conditions encountered in the boreholes are shown on the attached logs. In summary, the ground conditions comprised Topsoil over Weald Clay Formation, mainly clay soils with some localised sand bands. Groundwater was encountered in WS102 and WS103, within thin sand bands/deposits in the Weald Clay Formation, and in WS108, within a thin layer of silty clay, also in the Weald Clay Formation, during the site investigation works.

Monitoring Data:

A graph showing the groundwater variations monitored over the rounds is presented below with the full monitoring data sets attached to this letter.



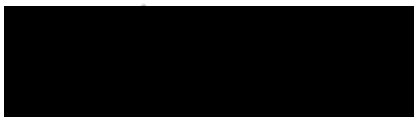
Groundwater was recorded to be shallow (less than 1.0m bgl) in the majority of the wells with the shallowest water levels recorded during different rounds in different wells across the site. The shallowest water levels in some of the wells were also recorded to be the same on two different monitoring rounds.

The groundwater levels in WS101, WS106 and WS109 recorded their shallowest depths in January 2025, reducing successively to April. The seasonal variation in the groundwater levels in these wells over the monitoring period ranged from 0.47-1.47m. The trend in WS102 was similar but peaked in February before reducing in March and April.

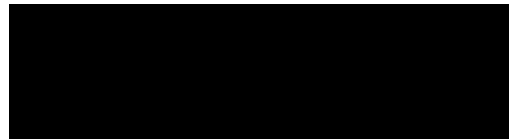
The groundwater levels in WS103, WS104, WS107, WS108 and WS110 remained relatively constant with seasonal variation over the monitoring period of 0.05-0.21m.

The groundwater level in WS105 was contrary to the anticipated trend and rose from its deepest level in January through February and into March then maintained the shallow depth in April. The groundwater level rose by 1.03m over the monitoring period to 1.02m bgl. This suggests the possible slow inflow of water to the well in WS105.

Yours sincerely

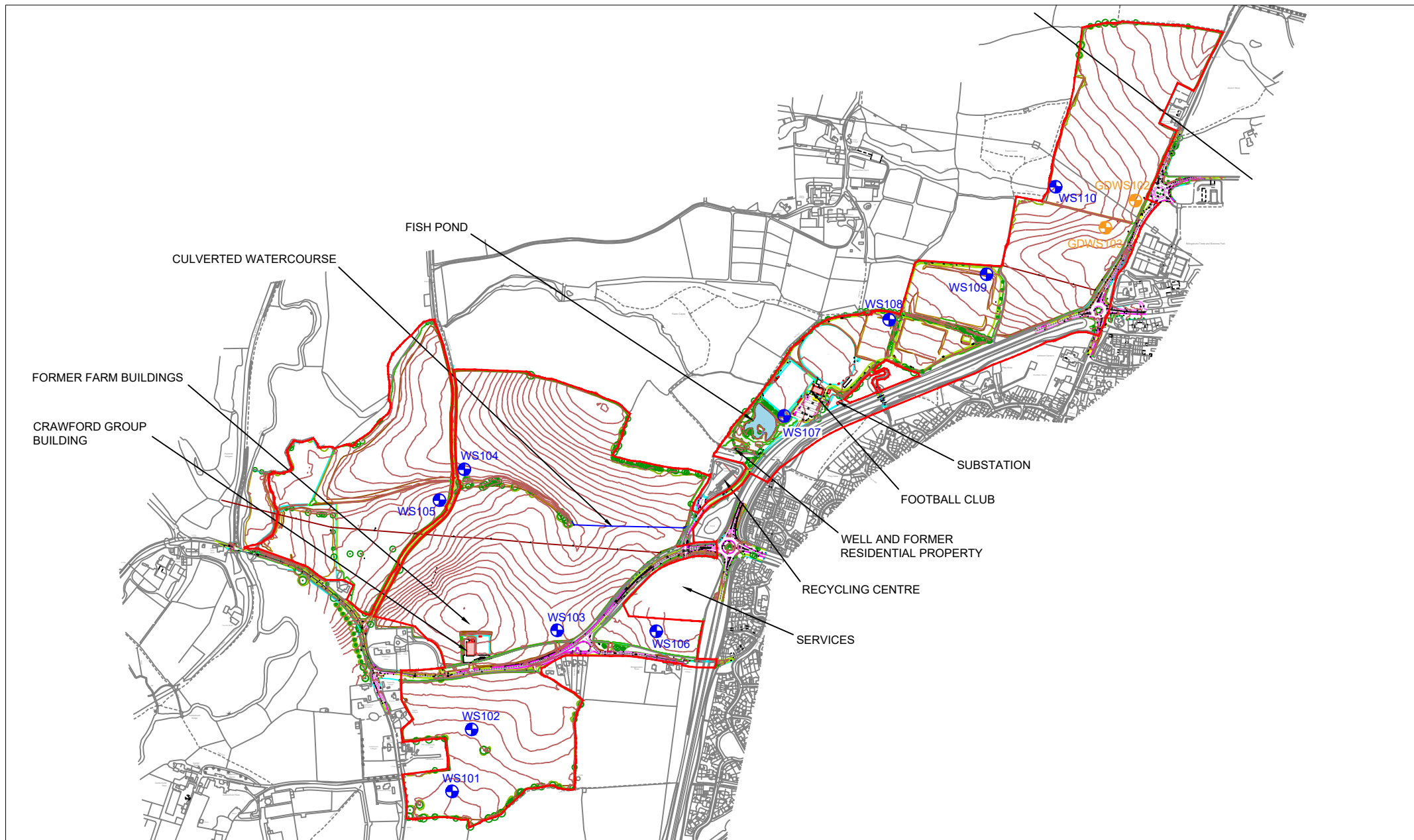


ANTONY PLATT
Director
For Ground Condition Consultants Ltd



RASMUS PALMGREN
Director
For Ground Condition Consultants Ltd

Encl: Figure 1 – Investigation Plan
Groundwater monitoring data
Borehole logs



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client
HIGHWOOD

project
BILLINGSHURST

title
SITE INVESTIGATION PLAN

scale NTS | drawn by DP | checked by RP

date 12 JAN 2026 | cad file J25-007

drawing number
FIGURE 1

rev.
1

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Billingshurst						General Site comments		
DATE: 30.01.25		1... of1...						
OPERATOR(S): RP								
Ambient Conditions:								
	Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	PID (ppm)			
Before Monitoring	-	-	-	-	-	EQUIPMENT		
After Monitoring	-	-	-	-	-	Instrument / Model Type	Serial Number	Comments
Atmospheric Pressure Trend:								
Ground Conditions: Soft/Wet						Standard Dipmeter	79301	
Weather Conditions: Sunny								

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)
					Eh	EC	pH	DO	Temp			
WS101	0.21	4.95										
WS102	0.84	2.52										
WS103	0.92	2.31										
WS104	0.22	4.83										
WS105	2.05	2.67										
WS106	1.08	3.59										
WS107	0.43	4.87										
WS108	1.01	4.56										
WS109	2.5	4.95										
WS110	0.87	2.72										
GDWS101	GL	2.65										
GDWS102	0.83	2.46										

Well volume (l) = $(3.14 \times (\text{hole diameter (m)}/2)^2 \times (\text{base dip (m)} - \text{standing water level (m)})) \times 1000$ (2l/m in 50mm well)

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - millibars; l/hr - litres per hour; wv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Billingshurst						General Site comments							
DATE: 27.02.25		1... of1...											
OPERATOR(S): RP													
Ambient Conditions:		Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)				PID (ppm)				
Before Monitoring		-	-	-	-	-	EQUIPMENT						
After Monitoring		-	-	-	-	-							
Atmospheric Pressure Trend:							Instrument / Model Type			Serial Number		Comments	
Ground Conditions:		Soft/Wet					Standard Dipmeter			79301			
Weather Conditions:		Sunny											

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)	
					Eh	EC	pH	DO	Temp				
WS101	0.29	4.95											
WS102	0.80	2.52											
WS103	0.83	2.31											
WS104	0.24	4.83											
WS105	1.40	2.67											
WS106	1.59	3.59											
WS107	0.41	4.87											
WS108	0.82	4.56											
WS109	3.77	4.95											
WS110	0.87	2.72											
GDWS101	GL	2.65											
GDWS102	0.79	2.46											

Well volume (l) = $(3.14 \times (\text{hole diameter (m)} / 2)^2 \times (\text{base dip (m)} - \text{standing water level (m)})) \times 1000$ (2l/m in 50mm well)

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - millibars; l/hr - litres per hour; vv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Billingshurst						General Site comments									
DATE: 26.03.25		1... of1...													
OPERATOR(S): ZB															
Ambient Conditions:		Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)				PID (ppm)						
Before Monitoring		-	-	-	-	-	EQUIPMENT								
After Monitoring		-	-	-	-	-									
Atmospheric Pressure Trend:							Instrument / Model Type			Serial Number			Comments		
Ground Conditions:		Soft					Standard Dipmeter			79301					
Weather Conditions:		Sunny													

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)	
					Eh	EC	pH	DO	Temp				
WS101	0.29	4.95											
WS102	1.04	2.50											
WS103	0.90	2.26											
WS104	0.22	4.78											
WS105	1.02	2.60											
WS106	2.13	3.54											
WS107	0.39	4.83											
WS108	0.82	4.56											
WS109	3.9	4.94											
WS110	0.91	2.41											
GDWS101	N/R	N/R											
GDWS102	N/R	N/R											

Well volume (l) = $(3.14 \times (\text{hole diameter (m)}/2)^2 \times (\text{base dip (m)} - \text{standing water level (m)})) \times 1000$ (2l/m in 50mm well)

Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - millibars; l/hr - litres per hour; vv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

GROUND GAS AND GROUNDWATER MONITORING RESULTS



SITE/REF: Billingshurst						General Site comments		
DATE: 16.04.25		1... of1...						
OPERATOR(S): ZB								
Ambient Conditions:								
	Barometric Pressure (mb)	CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	PID (ppm)			
Before Monitoring	-	-	-	-	-	EQUIPMENT		
After Monitoring	-	-	-	-	-			
Atmospheric Pressure Trend:						Instrument / Model Type	Serial Number	Comments
Ground Conditions: Firm						Standard Dipmeter	79301	
Weather Conditions: Partly Sunny								

Ground Gas Note: "0" readings to be recorded as instrument detection limit

Borehole ID	Time	Flow (l/hr)	Relative Pressure (mb)	Steady CH ₄ (%v/v)	CO ₂ (%v/v)	O ₂ (%v/v)	Peak CH ₄ (%v/v)	% of Lower Explosive Limit	CO (ppm)	H ₂ S (ppm)	Balance (%)	PID (ppm)	Response Zone		Response Strata	Gas screening value CH ₄	Gas screening value CO ₂
													From (mbgl)	To (mbgl)			

Groundwater

Borehole ID	Standing Water Level (mbgl)	Installation Base Dip (mbgl)	Free Phase LNAPL Thickness (m)	Free Phase DNAPL Thickness (m)	Water Quality Indicators					Well Volume (l)	Purge Volume (l)	Comments (samples)
					Eh	EC	pH	DO	Temp			
WS101	0.68	4.95										
WS102	1.20	2.50										
WS103	0.71	2.26										
WS104	0.29	4.78										
WS105	1.02	2.60										
WS106	2.38	3.54										
WS107	0.44	4.83										
WS108	0.99	4.56										
WS109	3.97	4.94										
WS110	1	2.41										
GDWS101	N/R	N/R										
GDWS102	N/R	N/R										

Well volume (l) = (3.14 x (hole diameter (m)/2)² x (base dip (m) - standing water level (m)))x1000 (2l/m in 50mm well)

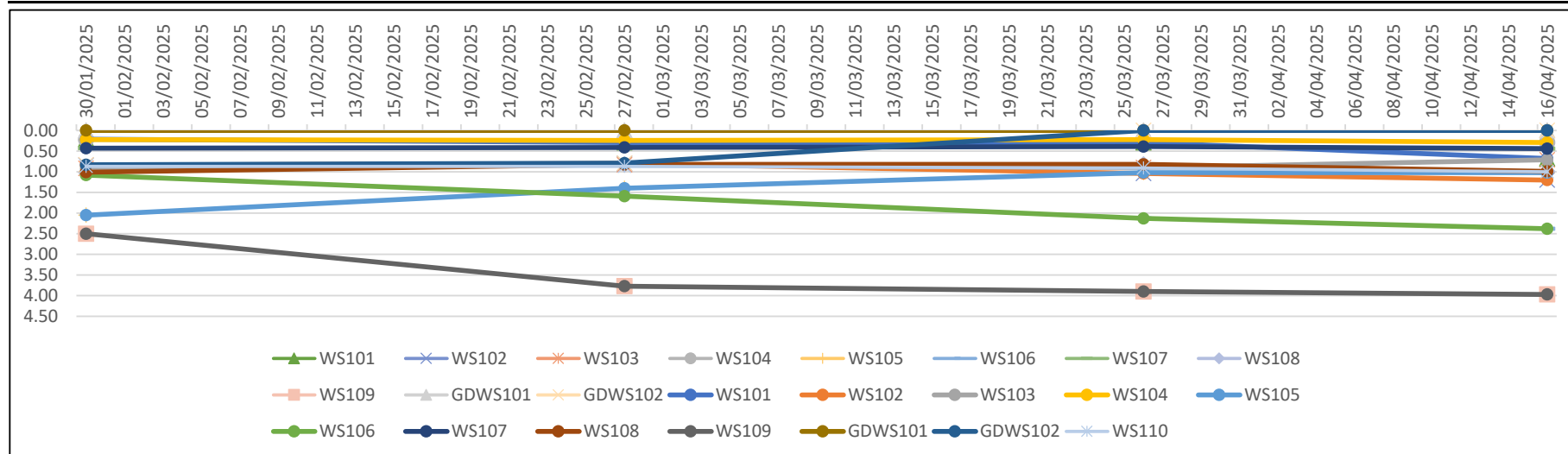
Gas screening value = gas concentration (%) x gas flow rate (l/hr)

%v/v - Percentage volume by total volume; mbgl - metres below ground level; ppm - parts per million; mb - millibars; l/hr - litres per hour; wv - water vial; gb - 1l glass bottle; pb - 1l plastic bottle

Site: Billingshurst
Job No: J25-007



Date:	30/01/2025	27/02/2025	26/03/2025	16/04/2025							Shallowest	Deepest
Borehole ID	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)	Standing Water Level (mbgl)
WS101	0.21	0.29	0.29	0.68							0.21	0.68
WS102	0.84	0.80	1.04	1.20							0.80	1.20
WS103	0.92	0.83	0.90	0.71							0.71	0.92
WS104	0.22	0.24	0.22	0.29							0.22	0.29
WS105	2.05	1.40	1.02	1.02							1.02	2.05
WS106	1.08	1.59	2.13	2.38							1.08	2.38
WS107	0.43	0.41	0.39	0.44							0.39	0.44
WS108	1.01	0.82	0.82	0.99							0.82	1.01
WS109	2.50	3.77	3.90	3.97							2.50	3.97
WS110	0.87	0.87	0.91	1.00							0.87	1.00
GDWS101	0.00	0.00	N/R	N/R							0.00	0.00
GDWS102	0.83	0.79	N/R	N/R							0.79	0.83



Where wells were monitored to be dry, the installation base depth has been used.



Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	1.50 - 2.00	B		0.60			Grass over soft dark brown silty CLAY	
							Firm to stiff brown grey mottled slightly silty CLAY	1
							Stiff brown CLAY	3
							Stiff grey slightly silty CLAY	4
							End of Borehole at 5.00m	5
							End of Borehole at 5.00m	6
							End of Borehole at 5.00m	
							End of Borehole at 5.00m	
							End of Borehole at 5.00m	
							End of Borehole at 5.00m	

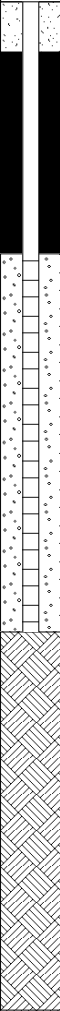
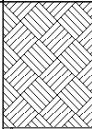
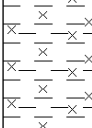
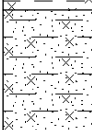
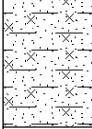
Remarks	
Groundwater not encountered	





Percussion Drilling Log

Project Name: Billingshurst		Client: Highwood		Date: 23/01/2025	
Location: Billingshurst		Contractor: Oakland SI			
Project No. : J25-007		Crew Name: OB		Drilling Equipment: Terrier	
Borehole Number WS103	Hole Type WLS	Level	Logged By RP	Scale 1:30	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					
		1.20 - 1.50	B		0.50			Grass over soft dark brown silty CLAY	
								Soft brown grey orange mottled slightly silty CLAY	
					1.10			Brown grey slightly clayey silty fine to medium SAND	1
					2.10			Firm to stiff brown grey CLAY	2
								End of Borehole at 4.00m	3
					4.00				4
									5
									6

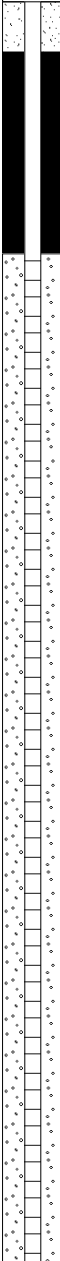
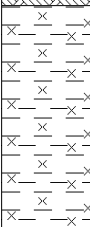
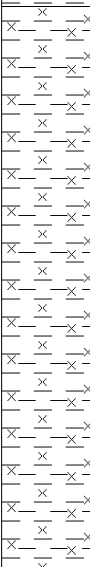
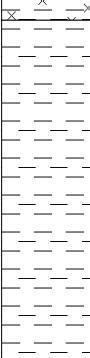
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks

Groundwater encountered at 2.10m bgl. Location refused at 4.00m in stiff clay





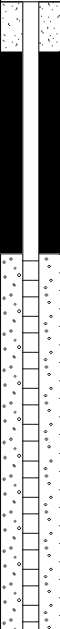
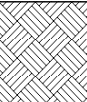
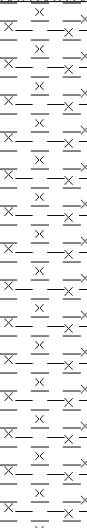
Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth (m)	Type	Results						
	1.30 - 1.80	B		0.40			Soft brown silty CLAY		
				1.30			Soft to stiff brown grey slightly silty CLAY	1	
						3.60		Stiff brown grey slightly silty CLAY	2
							5.00		Stiff grey CLAY
				End of Borehole at 5.00m				4	
								6	

[illegible]



Percussion Drilling Log

Project Name: Billingshurst		Client: Highwood		Date: 23/01/2025	
Location: Billingshurst		Contractor: Oakland SI			
Project No. : J25-007		Crew Name: OB		Drilling Equipment: Terrier	
Borehole Number WS105	Hole Type WLS	Level	Logged By RP	Scale 1:30	Page Number Sheet 1 of 1

Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
				0.40			Grass over soft brown silty CLAY	
							Firm to stiff brown grey slightly silty CLAY	1
				2.50			End of Borehole at 2.50m	2
								3
								4
								5
								6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

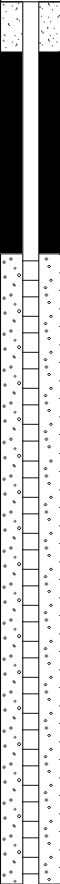
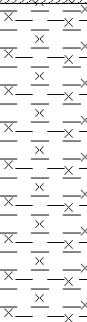
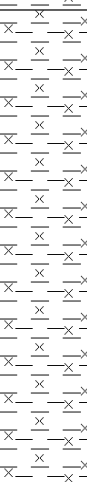
Remarks
Groundwater not encountered. Location refused at 2.50m in stiff clay





Percussion Drilling Log

Project Name: Billingshurst		Client: Highwood		Date: 24/01/2025	
Location: Billingshurst		Contractor: Oakland SI			
Project No. : J25-007		Crew Name: OB		Drilling Equipment: Terrier	
Borehole Number WS106	Hole Type WLS	Level	Logged By RP	Scale 1:30	Page Number Sheet 1 of 1

Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
				0.30			Grass over soft brown silty CLAY	
							Soft to firm brown grey mottled slightly silty CLAY	1
				1.60			Firm to stiff brown grey mottled slightly silty CLAY	2
								3
				3.50			End of Borehole at 3.50m	4
								5
								6

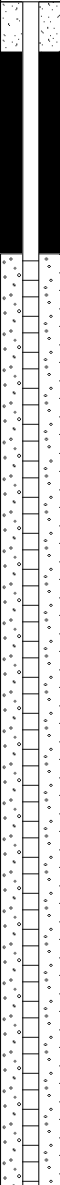
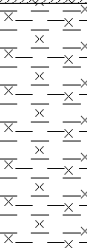
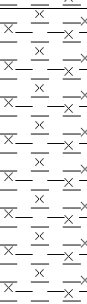
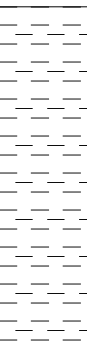
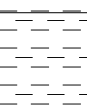
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks	
Groundwater not encountered. Location refused at 2.50m in stiff clay	



Percussion Drilling Log

Project Name: Billingshurst		Client: Highwood		Date: 24/01/2025	
Location: Billingshurst		Contractor: Oakland SI			
Project No. : J25-007		Crew Name: OB		Drilling Equipment: Terrier	
Borehole Number WS107	Hole Type WLS	Level	Logged By RP	Scale 1:30	Page Number Sheet 1 of 1

Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	1.30 - 1.80	B		0.30			Grass over soft brown silty CLAY	
							Soft to firm brown grey orange mottled slightly silty CLAY	1
				1.30			Firm to stiff brown grey orange mottled slightly silty CLAY	2
				2.50			Stiff grey brown CLAY	
				2.90			Stiff brown red CLAY	3
				4.30			Stiff grey CLAY	4
				4.70			End of Borehole at 4.70m	5
								6

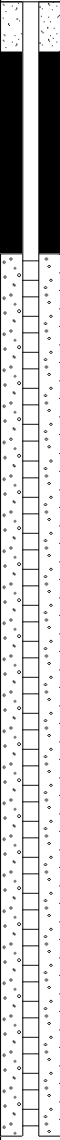
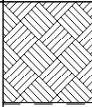
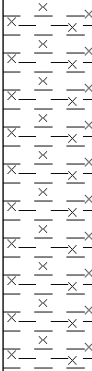
Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks Groundwater not encountered. Location refused at 3.50m in stiff clay										
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Percussion Drilling Log

Project Name: Billingshurst		Client: Highwood		Date: 24/01/2025	
Location: Billingshurst		Contractor: Oakland SI			
Project No. : J25-007		Crew Name: OB		Drilling Equipment: Terrier	
Borehole Number WS108	Hole Type WLS	Level	Logged By RP	Scale 1:30	Page Number Sheet 1 of 1

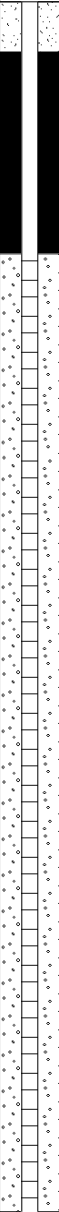
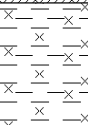
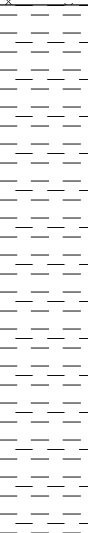
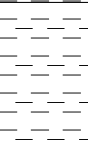
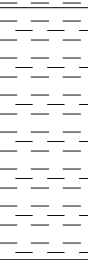
Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.40			Grass over soft dark brown silty CLAY	
								Firm to stiff brown grey slightly silty CLAY	1
					1.90			Stiff brown red CLAY	2
									3
									4
					4.50			End of Borehole at 4.50m	5
									6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks
Groundwater encountered at 1.90m bgl. Location refused at 4.70m in stiff clay





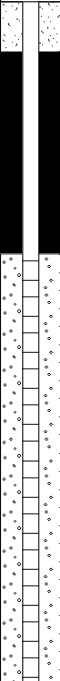
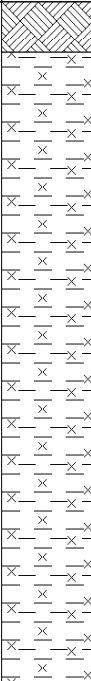
Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth (m)	Type	Results				
	1.30 - 1.80	B		0.60			Grass over soft brown silty CLAY with occasional rootlets
							Firm brown grey slightly silty CLAY
							Stiff brown red CLAY
							Stiff grey CLAY
							Stiff brown red CLAY
							End of Borehole at 4.80m

Remarks	
Groundwater not encountered. Location refused at 4.50m in stiff clay	



Percussion Drilling Log

Project Name: Billingshurst		Client: Highwood		Date: 24/01/2025	
Location: Billingshurst		Contractor: Oakland SI			
Project No. : J25-007		Crew Name: OB		Drilling Equipment: Terrier	
Borehole Number WS110	Hole Type WLS	Level	Logged By RP	Scale 1:30	Page Number Sheet 1 of 1

Well	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth (m)	Type	Results					
	1.30 - 1.60	B		0.20			Grass over soft brown silty CLAY	
							Firm to stiff grey brown slightly silty CLAY	1
								2
				2.70			End of Borehole at 2.70m	3
								4
								5
								6

Hole Diameter		Casing Diameter		Chiselling				Inclination and Orientation			
Depth Base	Diameter	Depth Base	Diameter	Depth Top	Depth Base	Duration	Tool	Depth Top	Depth Base	Inclination	Orientation

Remarks Groundwater not encountered. Location refused at 4.80m in stiff clay	
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