




Appendix 4

Field Investigation Data

Client : GREEN CITY DEVELOPMENTS LIMITED				Auger Borehole No. HA01					
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH				Sheet 1 of 24					
Job Number: J00862				Vane Head: 1750	Logged By: EL/LJ	Processor : LJ	Date: 12.02.18		
Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
	Description: Refer to site plan								
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, brown. stiff, moist, low to medium plasticity, with minor limonite [PUKETOKA FORMATION]									Sample 1 Disturbed 0.5-1.0m
becoming red/orange mottled light grey, with minor organic staining					0.5				
becoming very stiff, insensitive					1.0	169/93	1.8		
silty CLAY, orange mottled light grey. Very stiff, moist, medium plasticity, insensitive					1.5	134/73	1.8		
clayey SILT, red mottled light grey. Very stiff, moist, low plasticity, moderately sensitive					2.0	195/71	2.7		
at 3.0m, becoming stiff, with minor limonite silt inclusions					2.5	140/37	3.8		
EOB at 3.0m. Target Depth.					3.0	78/20	3.9		
					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				
	Comments: Groundwater encountered 1.3m. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic	
				50mm	Fill	Gravel	Siltstone	No Core	
				Checked:	Clay	Organic	Limestone		
				<i>AS</i>	Silt	Pumice	Volcanic		

Client : GREEN CITY DEVELOPMENTS LIMITED Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH				Auger Borehole No. HA02 Sheet 2 of 24					
Job Number: J00862				Vane Head: 946	Logged By: RG	Processor : EL	Date: 12.02.18		
Borehole Location:	mN Description: Refer to site plan	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, mottled orange, light brown and dark brown. Very stiff, moist, low plasticity, insensitive, with minor organic inclusions [FILL]					0.5	▽	128/66	1.9	
becoming stiff, sensitive					1.0		96/19	5.1	
fine sandy CLAY, orange mottled light brown. Very stiff, saturated, medium plasticity, moderately sensitive [NATURAL]					1.5		149/54	2.8	
clayey SILT, light orange/brown mottled light grey. Very stiff, wet, medium plasticity, moderately sensitive					2.0		100/49	2.0	
fine sandy SILT, orange mottled light grey. Medium dense, moist, no plasticity					2.5		186+		
clayey SILT, dark grey. Hard, moist, medium plasticity [TRANSITION]					3.0		UTP		
EOB at 3.0m. Target Depth.					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				
	Comments: Groundwater encountered 1.1m. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic	
				50mm	Fill	Gravel	Siltstone	No Core	
				Checked:	Clay	Organic	Limestone		
				<i>AB</i>	Silt	Pumice	Volcanic		

Client : GREEN CITY DEVELOPMENTS LIMITED				Auger Borehole No. HA03					
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH				Sheet 3 of 24					
Job Number: J00862				Vane Head: 946	Logged By: RG	Processor : EL	Date: 13.02.18		
Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
	Description: Refer to site plan								
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, light brown/orange mottled light grey. Very stiff, moist, low plasticity, insensitive [FILL]					0.5		142/75	1.9	
clayey SILT, orange mottled light grey. Very stiff, moist, medium plasticity, insensitive [PUKETOKA FORMATION]					1.0		165/89	1.9	
					1.5		104/62	1.7	
silty CLAY, orange mottled light grey. Stiff, moist, medium to high plasticity, moderately sensitive					2.0		89/42	2.1	
fine sandy SILT, orange mottled light grey/brown. Loose, wet, no plasticity, moderately sensitive becoming saturated					2.5		75/36	2.1	
becoming coarse sandy SILT, medium dense, with major limonite staining					3.0		UTP		
becoming loose					3.5		165/49	3.4	
silty FINE SAND, dark grey. Medium dense, wet, no plasticity [TRANSITION]					4.0		UTP		
clayey SILT, dark grey. Hard, moist, high plasticity					4.5		UTP		
EOB at 5.0m. Target Depth.					5.0		UTP		
					5.5				
					6.0				
	Comments: Groundwater encountered 1.6m. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter: 50mm	Topsoil	Sand	Sandstone	Plutonic	
				Checked: <i>AS</i>	Fill	Gravel	Siltstone	No Core	
					Clay	Organic	Limestone		
					Silt	Pumice	Volcanic		

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA04
 Sheet 4 of 24

Job Number: J00862

Vane Head: 1750
 Logged By: LJ
 Processor: EL
 Date: 12.02.18

Borehole Location: mN mE Ground R.L.
 Description: Refer to site plan

Legend
 Depth (m)
 Standing Water Level
 Vane Shear (kPa) peak / residual
 Soil Sensitivity
 Sample and Laboratory / Other Test Details

SOIL DESCRIPTION

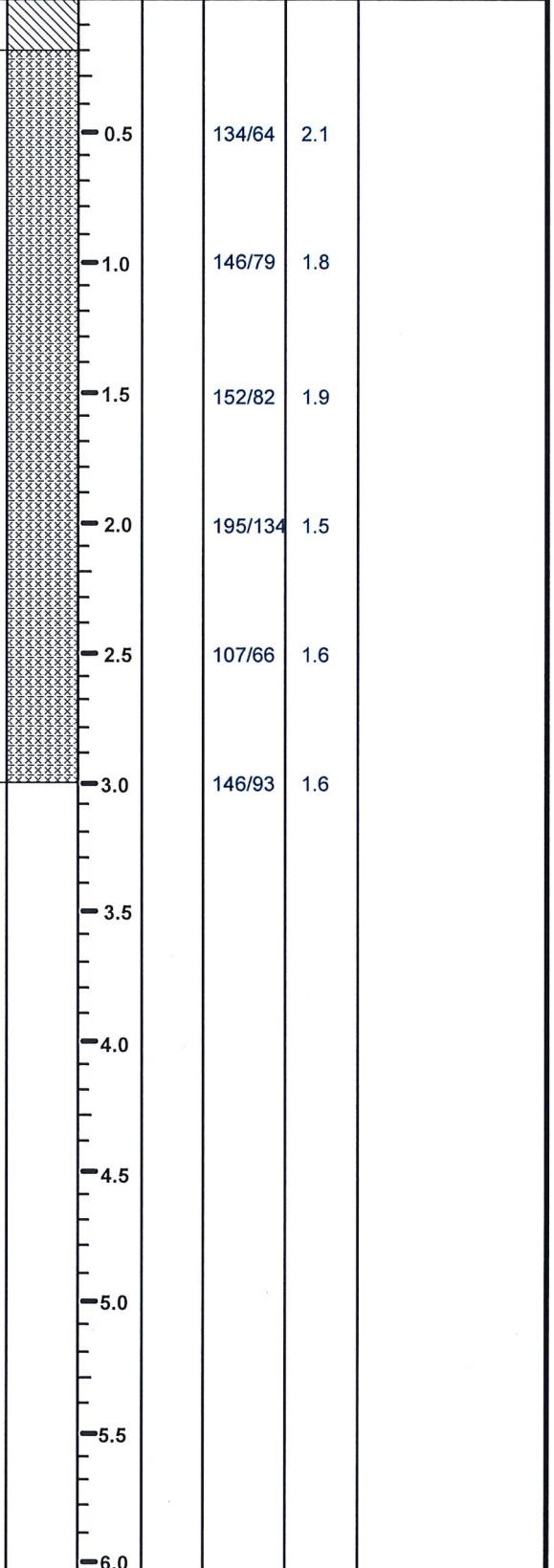
TOPSOIL

clayey SILT, orange/brown. Very stiff, moist, low plasticity, moderately sensitive, with minor limonite [PUKETOKA FORMATION]

becoming insensitive at 1.1m, becoming yellow/brown speckled light grey/white, low to medium plasticity, with trace to minor organic staining, without limonite

becoming pink and yellow/brown streaked light grey/white, without organic staining

EOB at 3.0m. Target Depth.



Comments:
 Groundwater not encountered.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
50mm	Fill	Gravel	Siltstone	No Core
Checked:	Clay	Organic	Limestone	
<i>ABS</i>	Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA06
 Sheet 6 of 24

Job Number: J00862

Vane Head: 2007
 Logged By: EL
 Processor: LJ
 Date: 12.02.18

Borehole Location: mN mE Ground R.L.
 Description: Refer to site plan

Legend
 Depth (m)
 Standing Water Level
 Vane Shear (kPa) peak / residual
 Soil Sensitivity
 Sample and Laboratory / Other Test Details


SOIL DESCRIPTION

TOPSOIL				
silty CLAY, orange mottled light brown. Very stiff, moist, high plasticity, moderately sensitive [PUKETOKA FORMATION]				
becoming light grey and orange mottled brown		0.5	110/40	2.8
becoming stiff becoming orange mottled light brown		1.0	84/41	2.0
clayey SILT, orange streaked light grey. Very stiff, moist, low to medium plasticity, insensitive		1.5	131/84	1.6
silty CLAY, red and orange mottled light grey. Very stiff, moist, high plasticity				
silty CLAY, red and orange mottled light grey. Very stiff, moist, medium to high plasticity, insensitive		2.0	123/75	1.6
with dark grey mottles				
silty CLAY, red and orange mottled light grey. Stiff, wet, high plasticity, moderately sensitive		2.5	92/47	2.0
becoming insensitive				
EOB at 3.0m. Target Depth.		3.0	66/37	1.8
		3.5		
		4.0		
		4.5		
		5.0		
		5.5		
		6.0		



Comments:
 Groundwater encountered 2.3m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
50mm	Fill	Gravel	Siltstone	No Core
Checked:	Clay	Organic	Limestone	
<i>AB</i>	Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED				Auger Borehole No. HA07					
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH				Sheet 7 of 24					
Job Number: J00862		Vane Head: 1900		Logged By: JL		Processor: EL			
						Date: 12.02.18			
Borehole Location:	mN	mE	Ground R.L.						
	Description: Refer to site plan								
SOIL DESCRIPTION				Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
TOPSOIL									
silty CLAY, orange. Very stiff, moist, medium plasticity [PUKETOKA FORMATION]									
clayey SILT, light orange. Very stiff, wet, low plasticity, moderately sensitive, with minor fine sand					0.5		105/43	2.4	Sample 1 Disturbed 0.5-1.0m
becoming stiff					1.0		69/19	3.6	
silty CLAY, orange streaked light grey. Very stiff, moist, medium plasticity					1.5		116/57	2.0	
becoming insensitive					2.0	▽	133/83	1.6	
with some fine sand					2.5		122/81	1.5	
at 3.0m, becoming hard					3.0		UTP		
EOB at 3.0m. Target Depth.					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				
	Comments: Groundwater encountered 0.9m. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic	
				50mm	Fill	Gravel	Siltstone	No Core	
				Checked:	Clay	Organic	Limestone		
				AB	Silt	Pumice	Volcanic		

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA08

Sheet 8 of 24


Job Number: J00862

Vane Head: 946
 Logged By: RG
 Processor: EL
 Date: 12.02.18

Borehole Location: mN mE Ground R.L.
 Description: Refer to site plan

SOIL DESCRIPTION

Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
	0.0				
	0.5		149/63	2.4	
	1.0		165/82	2.0	
	1.5		129/50	2.6	
	2.0		104/57	1.8	
	2.5	▽	149/62	2.4	
	3.0		110/62	1.8	
	3.5				
	4.0				
	4.5				
	5.0				
	5.5				
	6.0				

	Comments: Groundwater encountered 2.4m. UTP = unable to penetrate. EOB = end of borehole.	Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
		50mm	Fill	Gravel	Siltstone	No Core
		Checked:	Clay	Organic	Limestone	
			Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA09
 Sheet 9 of 24

Job Number: J00862

Vane Head: 1750
 Logged By: LJ
 Processor: EL
 Date: 12.02.18

Borehole Location: mN mE Ground R.L.
 Description: Refer to site plan

Legend
 Depth (m)
 Standing Water Level
 Vane Shear (kPa) peak / residual
 Soil Sensitivity
 Sample and Laboratory / Other Test Details

SOIL DESCRIPTION

TOPSOIL
 clayey SILT, brown. Very stiff, moist, low plasticity, moderately sensitive with trace rootlets [FILL]

becoming stiff

EOB at 1.3m. Too hard to auger further. Inferred boulder/gravel encountered.

0.5 134/37 3.6
 1.0 68/24 2.8

Sample 1
 Disturbed
 0.5-1.0m

1.5
 2.0
 2.5
 3.0
 3.5
 4.0
 4.5
 5.0
 5.5
 6.0



Comments:
 Groundwater not encountered.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter:
 50mm

Checked:
AB

Topsoil		Sand		Sandstone		Plutonic	
Fill		Gravel		Siltstone		No Core	
Clay		Organic		Limestone			
Silt		Pumice		Volcanic			

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA10

Sheet 10 of 24

Job Number: J00862

Vane Head: 1750
 Logged By: LJ
 Processor: EL
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, orange/brown. Very stiff, moist, low plasticity, moderately sensitive, with minor limonite [PUKETOKA FORMATION]					0.5		155/56	2.8	
becoming slightly clayey SILT, no to low plasticity becoming wet becoming saturated, quick					1.0		178/4	44.5	
becoming clayey SILT, mottled yellow/brown and light grey/white, low to medium plasticity, with trace of light purple organic staining, without limonite at 1.4m, without organic stain becoming moderately sensitive					1.5	▽	160/66	2.4	
becoming hard, with moderately thin bed of major limonite silt					2.0		203+		
becoming slightly clayey SILT, mottled pink, yellow/brown and light grey/white. Very stiff, no to low plasticity					2.5		120/59	2.0	
EOB at 3.0m. Target Depth.					3.0		107/52	2.1	
					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				



Comments:
 Groundwater encountered 0.9m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
50mm	Fill	Gravel	Siltstone	No Core
Checked:	Clay	Organic	Limestone	
AB	Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA11

Sheet 11 of 24

Job Number: J00862

Vane Head: 946
 Logged By: RG
 Processor: EL
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, light brown/orange. Very stiff, moist, low plasticity, moderately sensitive with minor organic inclusions [FILL]					0.5		149/75	2.0	
becoming light brown/orange mottled light grey					1.0		132/63	2.1	
clayey SILT, orange mottled light grey. Very stiff, moist, medium plasticity, insensitive [PUKETOKA FORMATION]					1.5		165/89	1.9	
fine sandy SILT, red/pink mottled light grey. Very stiff, loose, moist, no plasticity, moderately sensitive, with major limonite staining					2.0		149/74	2.0	
clayey SILT, orange/pink mottled light grey. Very stiff, moist, low to medium plasticity, insensitive, with minor limonite staining					2.5		129/77	1.7	
fine sandy SILT with some clay, orange mottled light brown/grey. Stiff, wet, medium plasticity, insensitive, with major limonite staining					3.0		80/42	1.9	
becoming saturated					3.5		89/49	1.8	
silty CLAY, orange mottled light grey. Hard, moist, medium plasticity, moderately sensitive					4.0		116/55	2.1	
fine sandy CLAY, orange mottled light grey. Hard, wet, medium plasticity					4.5	▽	UTP		
EOB at 5.0m. Target Depth.					5.0		UTP		
					5.5				
					6.0				



Comments:
 Groundwater encountered 3.6m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm	Topsoil		Sand		Sandstone		Plutonic	
	Fill		Gravel		Siltstone		No Core	
	Clay		Organic		Limestone			
	Silt		Pumice		Volcanic			

Checked: *AB*

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA12

Sheet 12 of 24

Job Number: J00862

Vane Head: 2007
 Logged By: MPC/EL
 Processor: LJ
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
TOPSOIL									
silty CLAY, orange mottled light brown. Stiff, moist, high plasticity, moderately sensitive, with minor topsoil leaching [PUKETOKA FORMATION]					0.5		88/34	2.6	
becoming light grey and orange mottled light brown									
becoming orange mottled light grey, very stiff					1.0		152/65	2.3	
becoming insensitive					1.5		142/77	1.8	
clayey SILT, orange mottled light grey. Very stiff, moist, medium plasticity, moderately sensitive at 2.1m, becoming red mottled light grey					2.0		123/52	2.4	
silty CLAY, red and orange mottled light grey. Very stiff, moist, high plasticity, insensitive					2.5		112/59	1.9	
CLAY, orange mottled light grey. Stiff, moist, high plasticity, moderately sensitive becoming light grey mottled orange					3.0		87/44	2.0	
silty CLAY, light grey mottled orange/brown. Very stiff, moist, medium to high plasticity, moderately sensitive					3.5		105/37	2.8	
clayey SILT, orange mottled light grey. Stiff, moist, low to medium plasticity, moderately sensitive					4.0	▽	95/29	3.3	
fine sandy SILT with minor clay, light grey/brown. Stiff, wet, low plasticity, moderately sensitive at 4.4m, becoming orange mottled light grey and brown					4.5		98/49	2.0	
becoming mottled light grey and orange									
EOB at 5.0m. Target Depth.					5.0		136/66	2.1	
					5.5				
					6.0				



Comments:
 Groundwater encountered 4.0m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic
50mm	Fill	Gravel	Siltstone	No Core
Checked:	Clay	Organic	Limestone	
<i>ABS</i>	Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA13

Sheet 13 of 24

Job Number: J00862

Vane Head: 1750
 Logged By: LJ
 Processor: EL
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, yellow/brown. Very stiff, moist, low plasticity, moderately sensitive, intermixed with minor brown silt [PUKETOKA FORMATION]									Sample 1 Disturbed 0.5-1.0m
with minor limonite, without brown silt intermixed					0.5		125/52	2.4	
becoming slightly clayey SILT, mottled yellow/brown and light grey/white, insensitive, without limonite					1.0		110/66	1.7	
becoming stiff, moist to wet, moderately sensitive					1.5		79/40	2.0	
becoming insensitive					2.0	▽	66/37	1.8	
becoming saturated, with minor fine sand					2.5		73/37	2.0	
becoming moderately sensitive					3.0		71/37	1.9	
becoming insensitive					3.5		112/53	2.1	
becoming clayey SILT, light brown/light grey, very stiff, low plasticity, without sand					4.0		100/66	1.5	
becoming very stiff, moderately sensitive					4.3		163/74	2.2	
clayey SILT, dark grey. Very stiff, moist, low plasticity, insensitive [TRANSITION]					4.5				Scala Penetrometer Test (blows/100mm) 20+ (ER) ER = Effective Refusal
at 4.3m, becoming moderately sensitive					5.0				
EOB at 4.3m. Too hard to auger further. Scala penetrometer test commenced and found effective refusal immediately.					5.5				
					6.0				



Comments:
 Groundwater encountered 2.4m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm
 Checked: AB

Topsoil		Sand		Sandstone		Plutonic	
Fill		Gravel		Siltstone		No Core	
Clay		Organic		Limestone			
Silt		Pumice		Volcanic			

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA14

Sheet 14 of 24

Job Number: J00862

Vane Head: 1750
 Logged By: LJ
 Processor: EL
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
clayey SILT, brown mottled yellow/brown. Stiff, moist, low plasticity, moderately sensitive [COLLUVIUM]				[Pattern]	0.5	▽	77/37	2.1	Scala Penetrometer Test (blows/100mm) 13 20+ (ER) ER = Effective Refusal
with moderately thin bed of limonite silt									
becoming sensitive									
clayey SILT, dark grey. Hard, moist, low plasticity [TRANSITION]				1.0		52/10	5.2		
EOB at 1.7m. Too hard to auger further. Scala penetrometer test commenced and found effective refusal at 1.9m				1.5		UTP			
				2.0					
				2.5					
				3.0					
				3.5					
				4.0					
				4.5					
				5.0					
				5.5					
				6.0					



Comments:
 Groundwater encountered 1.0m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm	Topsoil	[Pattern]	Sand	[Pattern]	Sandstone	[Pattern]	Plutonic	[Pattern]
	Fill	[Pattern]	Gravel	[Pattern]	Siltstone	[Pattern]	No Core	
	Clay	[Pattern]	Organic	[Pattern]	Limestone	[Pattern]		
	Silt	[Pattern]	Pumice	[Pattern]	Volcanic	[Pattern]		

Checked: *AB*

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Job Number: J00862

Auger Borehole No. HA15

Sheet 15 of 24

Vane Head: 2007
 Logged By: MPC/EL
 Processor: LJ
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, orange mottled brown. Very stiff, moist, medium plasticity [PUKETOKA FORMATION]									
silty CLAY, orange mottled brown. Very stiff, moist, high plasticity, moderately sensitive becoming light grey and orange mottled brown					0.5		129/55	2.3	Sample 1 Disturbed 0.5-1.0m
with minor organic staining					1.0		126/55	2.3	
without organic staining					1.5		137/75	1.8	
becoming insensitive					2.0		92/58	1.6	
clayey SILT, orange mottled light grey. Very stiff, moist, high plasticity					2.5		69/34	2.0	
silty CLAY, orange mottled light grey. Stiff, moist, high plasticity, insensitive					3.0	▽	79/37	2.1	
clayey SILT, orange mottled light grey. Stiff, moist, medium plasticity									
fine sandy SILT with minor clay, light brown. Stiff, wet, low plasticity, moderately sensitive becoming orange mottled light brown									
becoming light orange mottled light grey									
EOB at 3.0m. Target Depth.									




Comments:
 Groundwater encountered 2.3m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm

Checked: *ABS*

Topsoil		Sand		Sandstone		Plutonic	
Fill		Gravel		Siltstone		No Core	
Clay		Organic		Limestone			
Silt		Pumice		Volcanic			

Client : GREEN CITY DEVELOPMENTS LIMITED				Auger Borehole No. HA16				
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH				Sheet 16 of 24				
Job Number: J00862		Vane Head: 946		Logged By: RG		Processor : LJ	Date: 12.02.18	
Borehole Location:	mN	mE	Ground R.L.					
	Description: Refer to site plan						Sample and Laboratory / Other Test Details	
SOIL DESCRIPTION				Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity
TOPSOIL								
clayey SILT, light orange/brown. Very stiff, moist, low to medium plasticity, moderately sensitive, with some organic inclusions [FILL]								
becoming mottled light grey					0.5		113/49	2.3
with minor organic inclusions								
becoming insensitive					1.0		115/65	1.8
					1.5		114/62	1.8
silty CLAY, orange/brown mottled light grey. Very stiff, moist, medium plasticity, insensitive [PUKETOKA FORMATION]					2.0		106/62	1.7
becoming wet, with minor limonite staining								
					2.5		117/62	1.9
fine sandy SILT, orange mottled light grey. Loose, saturated, no plasticity, moderately sensitive						▽		
EOB at 3.0m. Target Depth.					3.0		135/42	3.2
					3.5			
					4.0			
					4.5			
					5.0			
					5.5			
					6.0			
	Comments: Groundwater encountered 2.7m. UTP = unable to penetrate. EOB = end of borehole.		Borehole Diameter: 50mm	Topsoil	Sand	Sandstone	Plutonic	
			Checked: <i>AB</i>	Fill	Gravel	Siltstone	No Core	
				Clay	Organic	Limestone		
				Silt	Pumice	Volcanic		

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA17

Sheet 17 of 24

Job Number: J00862

Vane Head: 1750
 Logged By: LJ
 Processor: LJ
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
TOPSOIL									
slightly clayey SILT, orange/brown. Very stiff, moist, no to low plasticity, moderately sensitive, with minor limonite [PUKETOKA FORMATION]					0.5		145/66	2.2	Sample 1 Disturbed 0.5-1.0m
becoming clayey SILT, mottled red/pink, yellow/brown and light grey/white, hard, saturated, low to medium plasticity, without limonite					1.0		203+		
becoming slightly clayey SILT, light grey/white, no to low plasticity					1.5	▽	UTP		
becoming clayey SILT, very stiff, low plasticity, insensitive					2.0		178/120	1.5	
becoming medium plasticity					2.5		127/79	1.6	
at 2.9m, becoming slightly clayey SILT, mottled light grey/white, pink and yellow/brown, no to low plasticity at 3.0m, becoming hard					3.0		UTP		
EOB at 3.0m. Target Depth.					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				



Comments:
 Groundwater encountered 1.0m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm	Topsoil		Sand		Sandstone		Plutonic	
	Fill		Gravel		Siltstone		No Core	
	Clay		Organic		Limestone			
	Silt		Pumice		Volcanic			
Checked: <i>AB</i>								

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA18

Sheet 18 of 24

Job Number: J00862

Vane Head: 1900
 Logged By: JL
 Processor: LJ
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, orange. Stiff, moist, low plasticity, moderately sensitive [PUKETOKA FORMATION]					0.5		94/24	3.9	
silty CLAY, mottled light grey and orange. Very stiff, saturated, medium plasticity, sensitive					1.0		156/37	4.2	
becoming orange and red/orange streaked light grey, with trace fibrous organic inclusions						▽			
becoming moderately sensitive					1.5		120/54	2.2	
becoming insensitive					2.0		162/94	1.7	
at 2.5m, with laminated bed of limonite					2.5		111/53	2.1	
clayey SILT, pink streaked light grey. Very stiff, saturated, medium plasticity, moderately sensitive									
at 3.0m, becoming sensitive, with lamintated bed of limonite					3.0		137/29	4.7	
EOB at 3.0m. Target Depth.									
					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				



Comments:
 Groundwater encountered 0.5m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm	Topsoil		Sand		Sandstone		Plutonic	
	Fill		Gravel		Siltstone		No Core	
	Clay		Organic		Limestone			
	Silt		Pumice		Volcanic			

Checked: *ABS*

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA19

Sheet 19 of 24

Job Number: J00862

Vane Head: 1900
 Logged By: JL
 Processor: EL
 Date: 12.02.18

Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
SOIL DESCRIPTION									
TOPSOIL									
silty CLAY, orange/brown. Very stiff, moist, medium plasticity, moderately sensitive [PUKETOKA FORMATION]					0.5		129/57	2.3	
with minor sand sized pumiceous clast inclusions					1.0		127/62	2.0	
clayey SILT, light grey streaked orange. Stiff, moist, low plasticity, moderately sensitive, with minor fine sand					1.5		106/53	2.0	
fine sandy SILT, orange. Very stiff, moist, low to no plasticity, moderately sensitive, with trace clay					2.0		67/28	2.4	
becoming wet					2.5		116/43	2.7	
clayey SILT, orange streaked light grey. Stiff, wet, medium plasticity, moderately sensitive					3.0		84/24	3.5	
EOB at 3.0m. Target Depth.					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				



Comments:
 Groundwater not encountered.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter:

50mm

Checked:

AB

Topsoil		Sand		Sandstone		Plutonic	
Fill		Gravel		Siltstone		No Core	
Clay		Organic		Limestone			
Silt		Pumice		Volcanic			

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Job Number: J00862

Auger Borehole No. HA21

Sheet 21 of 24

Vane Head: 1750
 Logged By: LJ
 Processor: LJ
 Date: 12.02.18

Borehole Location: mN mE Ground R.L.
 Description: Refer to site plan

SOIL DESCRIPTION

TOPSOIL

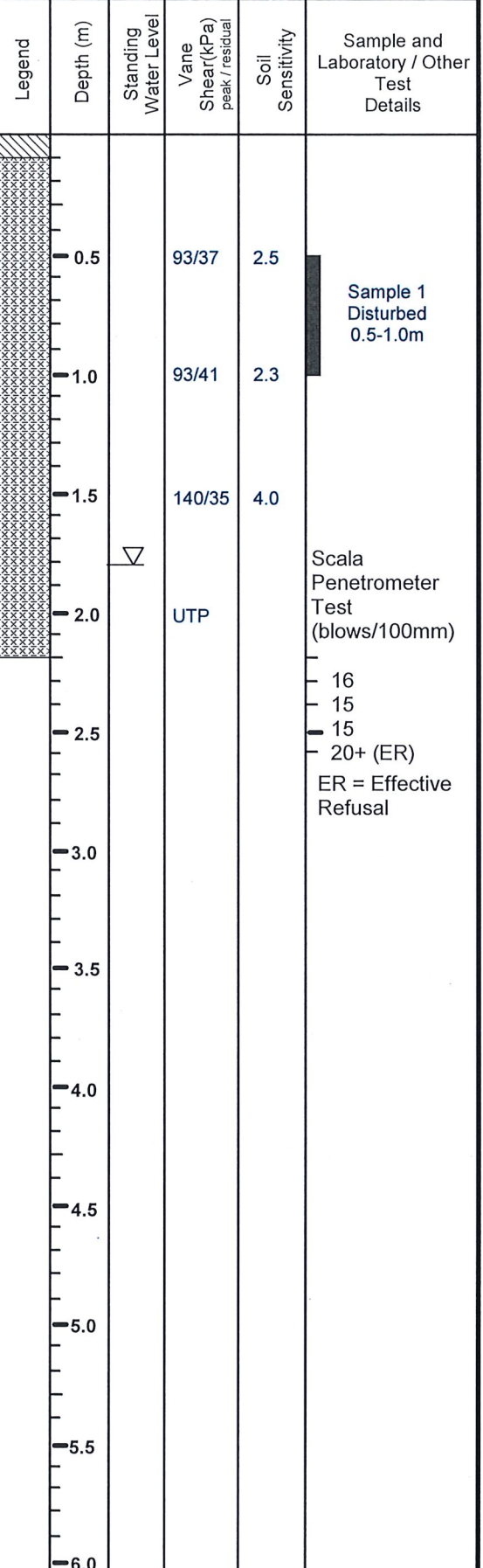
clayey SILT, orange/brown. Stiff, moist, low plasticity, moderately sensitive, with minor limonite [PUKETOKA FORMATION]

becoming slightly clayey SILT, mottled light grey/white and yellow/brown, without limonite

becoming very stiff, sensitive
 becoming yellow/brown mottled brown/grey, saturated, with minor fine to medium sand

becoming hard

EOB at 2.2m. Too hard to auger further. Scala penetrometer test commenced and found effective refusal at 2.6m.



Comments:
 Groundwater encountered 1.6m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm

Checked: *AB*

Topsoil	Sand	Sandstone	Plutonic
Fill	Gravel	Siltstone	No Core
Clay	Organic	Limestone	
Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH

Auger Borehole No. HA22

Sheet 22 of 24

Job Number: J00862

Vane Head: 946
 Logged By: RG
 Processor: LJ
 Date: 12.02.18


Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, orange streaked light grey. Very stiff, moist, low plasticity, moderately sensitive, with some organic inclusions [FILL]					0.5		125/62	2.0	
silty CLAY, light orange/brown mottled light grey. Stiff, moist, medium plasticity, insensitive [PUKETOKA FORMATION]					1.0	▽	91/51	1.8	
becoming very stiff, saturated, moderately sensitive					1.5		115/36	3.2	
becoming hard					2.0		UTP		
clayey SILT, dark grey. Hard, saturated, low plasticity					2.5		186+		
becoming very stiff					3.0		UTP		
becoming hard					3.5		UTP		
fine sandy SILT, orange mottled light grey. Loose, wet, medium plasticity, moderately sensitive at 3.9m, becoming orange, with some coarse sand					4.0		89/35	2.5	
becoming light brown/grey					4.5		82/49	1.7	
becoming insensitive					5.0		78/50	1.6	
EOB at 5.0m. Target Depth.					5.5				
					6.0				




Comments:
 Groundwater encountered 1.0m.
 UTP = unable to penetrate.
 EOB = end of borehole.

Borehole Diameter: 50mm
 Checked: *AB*

Topsoil		Sand		Sandstone		Plutonic	
Fill		Gravel		Siltstone		No Core	
Clay		Organic		Limestone			
Silt		Pumice		Volcanic			

Client : GREEN CITY DEVELOPMENTS LIMITED				Auger Borehole No. HA23					
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH				Sheet 23 of 24					
Job Number: J00862				Vane Head: 1750	Logged By: LJ	Processor : LJ	Date: 12.02.18		
Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
	Description: Refer to site plan								
SOIL DESCRIPTION									
TOPSOIL with rootlet and wood inclusions									
clayey SILT, light grey mottled yellow/brown. Very stiff, moist, low plasticity, moderately sensitive, with minor limonite [PUKETOKA FORMATION]					0.5		114/52	2.2	Sample 1 Disturbed 0.5-1.0m
becoming slightly clayey SILT, mottled light grey/white and yellow/brown, no to low plasticity, with minor to some limonite silt inclusions					1.0		115/52	2.2	
slightly clayey SILT, dark grey. Hard, moist, no to low plasticity [TRANSITION]					1.5		UTP		20+ (ER) Scala Penetrometer Test (blows/100mm) ER = Effective Refusal
EOB at 1.5m. Too hard to auger further. Scala penetrometer test commenced and found effective refusal immediately.					2.0				
					2.5				
					3.0				
					3.5				
					4.0				
					4.5				
					5.0				
					5.5				
					6.0				
	Comments: Groundwater not encountered. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter: 50mm	Topsoil	Sand	Sandstone	Plutonic	
				Checked: AB	Fill	Gravel	Siltstone	No Core	
					Clay	Organic	Limestone		
					Silt	Pumice	Volcanic		

Client : GREEN CITY DEVELOPMENTS LIMITED				Auger Borehole No. HA24					
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH				Sheet 24 of 24					
Job Number: J00862				Vane Head: 946	Logged By: RG	Processor : LJ	Date: 12.02.18		
Borehole Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Standing Water Level	Vane Shear (kPa) peak / residual	Soil Sensitivity	Sample and Laboratory / Other Test Details
Description: Refer to site plan									
SOIL DESCRIPTION									
TOPSOIL									
clayey SILT, mottled orange, dark brown and light grey. Firm, moist, low plasticity, insensitive [FILL]					0.5		47/27	1.7	
becoming stiff					1.0		88/46	1.9	
fine sandy SILT, orange mottled dark grey. Loose, moist to wet, no plasticity, insensitive [TRANSITION]					1.5		75/49	1.5	
becoming saturated					2.0	▽	80/8	10.0	Scala Penetrometer Test (blows/100mm)
becoming extra sensitive					2.5				11
EOB at 2.1m. Too hard to auger further. Scala penetrometer test commenced at 2.1m, and found effective refusal at 2.4m.					3.0				18
					3.5				20+ (ER)
					4.0				ER = Effective Refusal
					4.5				
					5.0				
					5.5				
					6.0				
	Comments: Groundwater encountered 1.7m. UTP = unable to penetrate. EOB = end of borehole.			Borehole Diameter:	Topsoil	Sand	Sandstone	Plutonic	
				50mm	Fill	Gravel	Siltstone	No Core	
				Checked:	Clay	Organic	Limestone		
				<i>ABS</i>	Silt	Pumice	Volcanic		



TP01



TP02



TP03



TP04



TP05



TP06



client:

GREEN CITY DEVELOPMENTS LIMITED

project:

125 MURPHYS ROAD

title:

FLAT BUSH

project no:

J00862

figure no:

Figure A

date:

22.02.2018

completed:

LJ

TRIAL PIT PHOTO SUMMARY

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH


Trial Pit No. TP01

Sheet 1 of 6

Job Number: J00862
















Vane Head: 2007
 Logged By: JL
 Processor: LJ
 Date: 16.02.18

Stratigraphy	Pit Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Groundwater	Vane Dial Reading	Soil Sensitivity	Sample and Laboratory Test Details
		Description: Refer to site plan								
SOIL DESCRIPTION										
SLUMP DEBRIS	TOPSOIL									
	silty CLAY with trace fine sand, orange streaked light grey. Stiff, moist, medium plasticity, with trace limonite, with occasional rootlet inclusions									
	becoming very stiff, moderately sensitive									
TRANSITIONAL E.C.B.F. PUKETOKA FORMATION	silty fine SAND, grey to dark grey. Medium dense, moist, no plasticity, with slickensided clay and limonite coated discontinuity surfaces									
	silty fine SAND, grey to dark grey. Medium dense, moist, no plasticity									
	silty fine SAND, dark grey. Dense, moist, no plasticity, with limonite coated discontinuity surfaces									
	EOTP at 5.4m. Too hard to excavate further.									

	Comments: Downslope side pit collapse from 1.0 to 5.1m.	Excavator Used:	Topsoil	Sand	Sandstone	Plutonic
		Robex 145 CR-9	Fill	Gravel	Siltstone	No Core
		Checked: JL	Clay	Organic	Limestone	
			Silt	Pumice	Volcanic	


Client : GREEN CITY DEVELOPMENTS LIMITED	Trial Pit No. TP 02			
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH	Sheet 2 of 6			
Job Number: J00862	Vane Head: 2007	Logged By: JL	Processor : LJ	Date: 16.02.18

Stratigraphy	Pit Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Groundwater	Vane Dial Reading	Soil Sensitivity	Sample and Laboratory Test Details
	Description: Refer to site plan									
	SOIL DESCRIPTION									
SLUMP DEBRIS	TOPSOIL									
	silty CLAY, light grey streaked orange. Stiff, moist, high plasticity, with trace fine sand becoming orange streaked light grey					0.5				
	becoming moderately sensitive					1.0				
	clayey SILT with trace fine sand, grey. Stiff, moist, low plasticity, with occasional organic staining and inclusions, with trace limonite					1.5				
	becoming sensitive					2.0		68/28	2.4	
	clayey SILT, dark grey. Hard, moist, low plasticity, with limonite coated discontinuity surfaces					2.5				
	becoming sensitive					3.0		69/10	6.9	
TRANSITIONAL E.C.B.F.	fine SAND, dark grey. Dense, moist, no plasticity					3.5	▽	UTP		
	EOTP at 4.3m. Too hard to excavate further.					4.0		UTP		
						4.5				
						5.0				
						5.5				
						6.0				

	Comments:	Excavator Used: Robex 145 CR-9	Topsoil		Sand		Sandstone		Plutonic	
		Checked: <i>JL</i>	Fill		Gravel		Siltstone		No Core	
		Clay		Organic		Limestone				
		Silt		Pumice		Volcanic				


Client : GREEN CITY DEVELOPMENTS LIMITED	Trial Pit No. TP 03			
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH	Sheet 3 of 6			
Job Number: J00862	Vane Head: 2007	Logged By: JL	Processor : LJ	Date: 16.02.18

Stratigraphy	Pit Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Groundwater	Vane Dial Reading	Soil Sensitivity	Sample and Laboratory Test Details
SOIL DESCRIPTION										
SLUMP DEBRIS	TOPSOIL									
	silty CLAY, orange streaked light grey. Very stiff, moist, high plasticity, with trace limonite, with occasional entrained cobble sized fine sand inclusions					0.5				
	becoming stiff, insensitive					1.0				
TRANSITIONAL E.C.B.F.	with some limonite					1.5				
	silty CLAY, light grey. Firm, moist, high plasticity					2.0	▽	66/38	1.7	
	clayey SILT, dark grey. Hard, moist, low to medium plasticity, with limonite coated discontinuity surfaces					2.5				
	almost rock					3.0	▽	UTP		
	EOTP at 4.1m. Too hard to excavate further.					3.5				
						4.0		UTP		
						4.5				
						5.0				
						5.5				
						6.0				

	Comments: Highly disturbed slipplane at 3.2m.	Excavator Used: Robex 145 CR-9	Topsoil		Sand		Sandstone		Plutonic	
		Checked: <i>JL</i>	Fill		Gravel		Siltstone		No Core	
			Clay		Organic		Limestone			
			Silt		Pumice		Volcanic			

Client : GREEN CITY DEVELOPMENTS LIMITED	Trial Pit No. TP 04			
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH	Sheet 4 of 6			
Job Number: J00862	Vane Head: 2007	Logged By: JL	Processor : LJ	Date: 16.02.18

Stratigraphy	Pit Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Groundwater	Vane Dial Reading	Soil Sensitivity	Sample and Laboratory Test Details	
	Description: Refer to site plan										
SOIL DESCRIPTION											
PUKETOKA FORMATION	TOPSOIL										
	silty CLAY, orange. Very stiff, moist, medium plasticity, with minor limonite						0.5				
	silty CLAY, orange streaked light grey. Very stiff, moist, high plasticity						1.0				
TRANSITIONAL E.C.B.F.	becoming slightly silty CLAY, red/orange and orange streaked light grey						1.5				
	becoming stiff, insensitive						2.0	▽			
	silty fine SAND, dark grey. Medium dense, moist, no plasticity						2.5		84/46	1.8	
TRANSITIONAL E.C.B.F.	clayey SILT, dark grey. Hard, moist, low plasticity						3.0				
	EOTP at 5.1m. Too hard to excavate further.						3.5				
							4.0	▽	UTP		
						4.5					
						5.0		UTP			
						5.5					
						6.0					

	Comments:	Excavator Used:	Topsoil	Sand	Sandstone	Plutonic
		Robex 145 CR-9				
		Checked: JL	Fill	Gravel	Siltstone	No Core
			Clay	Organic	Limestone	
	Silt	Pumice	Volcanic			

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH
Job Number: J00862

Trial Pit No. TP 05

Sheet 5 of 6

Vane Head: 2007
 Logged By: JL
 Processor: LJ
 Date: 16.02.18

Stratigraphy	Pit Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Groundwater	Vane Dial Reading	Soil Sensitivity	Sample and Laboratory Test Details
		Description: Refer to site plan								
SOIL DESCRIPTION										
PUKETOKA FORMATION	TOPSOIL				[Hatched Pattern]					
	silty CLAY, orange. Stiff, moist, high plasticity, insensitive				[Cross-hatch Pattern]	0.5		66/40	1.7	
	silty CLAY with minor fine sand, orange speckled light grey. Very stiff, moist, medium plasticity, with trace fine sand sized pumiceous inclusions				[Cross-hatch Pattern]	1.0				
	becoming moderately sensitive				[Cross-hatch Pattern]	1.5				
	becoming moderately sensitive				[Cross-hatch Pattern]	2.0				
	becoming moderately sensitive				[Cross-hatch Pattern]	2.5				
	clayey SILT with minor fine sand, orange streaked light grey. Stiff, wet, low plasticity, with occasional organic inclusions and staining, with trace limonite				[Cross-hatch Pattern]	3.0				
TRANSITIONAL E.C.B.F.	with minor limonite				[Cross-hatch Pattern]	3.5		52/24	2.2	
	clayey fine SAND, dark grey. Medium dense, moist, low plasticity				[Dotted Pattern]	4.0				
	clayey SILT, dark grey. Hard, moist, low plasticity				[Cross-hatch Pattern]	4.5				
EOTP at 5.0m. Too hard to excavate further.				[Cross-hatch Pattern]	5.0		UTP			
				[Cross-hatch Pattern]	5.5					
				[Cross-hatch Pattern]	6.0					



Comments:

Excavator Used: Robex 145 CR-9
 Checked: JL


Topsoil	[Hatched Pattern]	Sand	[Dotted Pattern]	Sandstone	[Dotted Pattern]	Plutonic	[Cross-hatch Pattern]
Fill	[Hatched Pattern]	Gravel	[Dotted Pattern]	Siltstone	[Dotted Pattern]	No Core	
Clay	[Cross-hatch Pattern]	Organic	[Cross-hatch Pattern]	Limestone	[Cross-hatch Pattern]		
Silt	[Cross-hatch Pattern]	Pumice	[Cross-hatch Pattern]	Volcanic	[Cross-hatch Pattern]		

Client : GREEN CITY DEVELOPMENTS LIMITED
Project Location : 125 MURPHYS ROAD (STAGE 2), FLAT BUSH
Job Number: J00862

Trial Pit No. TP06
 Sheet 6 of 6

Vane Head: 2007
 Logged By: JL
 Processor: LJ
 Date: 16.02.18

Stratigraphy	Pit Location:	mN	mE	Ground R.L.	Legend	Depth (m)	Groundwater	Vane Dial Reading	Soil Sensitivity	Sample and Laboratory Test Details
		Description: Refer to site plan								
SOIL DESCRIPTION										
SLUMP DEBRIS	TOPSOIL									
	silty CLAY, orange streaked light grey. Stiff, moist, medium plasticity, with rootlets, with trace fine sand, with minor limonite									
	becoming moderately sensitive									
TRANSITIONAL E.C.B.F.	becoming orange streaked light grey, wet, with some fine sand									
	clayey SILT, dark grey. Very stiff, moist, low plasticity									
becoming hard, almost rock										
EOTP at 4.3m. Too hard to excavate further.										

	Comments: Pit collapse from 0.5m on upslope and downslope sides.	Excavator Used:	Topsoil	Sand	Sandstone	Plutonic
		Robex 145 CR-9	Fill	Gravel	Siltstone	No Core
		Checked:	Clay	Organic	Limestone	
		JL	Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED

Project Location : 125 MURPHYS ROAD (STAGE 2),
FLAT BUSH

Job Number: J00862

Machine Borehole No. MH01

Sheet 1 of 2

Vane Head: 1900 | Logged By: JL | Processor: LJ | Start Date: 12.02.18
Finish Date: 12.02.18

Stratigraphy	Borehole Location:	mN		mE		Ground R.L.		Groundwater/ Piezometer	Drilling Method & Casing	Recovery (%)	RQD (%)	Sample and Laboratory Test Details	Vane Dial / Sensitivity & SPT							
		Description: Refer to site plan				Orientation: vertical														
CORE DESCRIPTION				Legend	Depth (m)	DEFECTS														
Puketoka Formation	TOPSOIL				Legend	Depth (m)	DEFECTS			Groundwater/ Piezometer	Drilling Method & Casing	Recovery (%)	RQD (%)	Sample and Laboratory Test Details	Vane Dial / Sensitivity & SPT					
	silty CLAY, orange/brown. Very stiff, moist, medium plasticity, moderately sensitive															0.5	Bentonite	OPEN BARREL WITH CASING	78	81/37 - 2.2 SPT at 1.5-1.95m 1/2/6 N=8
	becoming orange mottled light grey															1.0		OPEN BARREL WITH CASING	84	
	clayey SILT, orange streaked light grey. Stiff, moist, low plasticity															1.5		OPEN BARREL WITH CASING	100	67/34 - 2.0 SPT at 3.0-3.45m 1/1/0 N=1
	becoming moderately sensitive															2.0		OPEN BARREL WITH CASING	29	
	fine sandy SILT, orange streaked light grey. Very Loose, moist, no plasticity															2.5		OPEN BARREL WITH CASING	SPT	40/11 - 3.6
becoming light grey streaked orange, with some limonite				3.0	Screened from 1.5-15.5m	OPEN BARREL WITH CASING	100													
Transitional East Coast Bays Formation	at 4.4m, with 2 laminated beds of limonite				3.5	Gravel Backfill	TRIPLE TUBE	100	SPT at 6.0-6.45m 3/5/8 N=13											
	silty CLAY, dark grey. Hard, moist, medium plasticity, with occasional thin to moderately thin beds of clayey SILT with some fine sand				4.0		TRIPLE TUBE	SPT												
	slightly clayey fine SAND, dark grey. Medium dense, moist, no to low plasticity, with occasional rounded fine gravel inclusions				4.5		TRIPLE TUBE	62												
	slightly clayey SILT, dark grey. Medium dense, moist, no to low plasticity				5.0		TRIPLE TUBE	82												
	fine SAND, dark grey. Dense, moist, no plasticity				5.5		TRIPLE TUBE	100												
				6.0																
				6.5																
				7.0																
				7.5		1DI, 90°, PL, R4														
				8.0		7.5-7.7m, 3DI, 90°, PL, R4														
						1JN, 45°, PL, R4														



Comments:

Driller: Pro-Drill

Rig: Tractor Rig

Drilling Fluid:	Topsoil	Sand	Sandstone	Plutonic
	water	Fill	Siltstone	No Core
Checked:	Clay	Organic	Limestone	
	Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED

Project Location : 125 MURPHYS ROAD (STAGE 2),
FLAT BUSH

Job Number: J00862

Machine Borehole No. MH01

Sheet 2 of 2

Vane Head: 1900 Logged By: JL Processor: LJ Start Date: 12.02.18
Finish Date: 12.02.18

Stratigraphy	Borehole Location:	mN	mE	Ground R.L.		Groundwater/ Piezometer	Drilling Method & Casing	Recovery (%)	RQD (%)	Sample and Laboratory Test Details	Vane Dial/ Sensitivity & SPT
		Description: Refer to site plan		Orientation: vertical							
CORE DESCRIPTION		Legend	Depth (m)	DEFECTS							
Transitional E.C.B.F.			8.5	8.45-8.75m, 1JN, 10°, PL, R2-R1		TRIPLE TUBE	SPT				SPT at 8.0-8.45m 9/10/13 N=23
	slightly weathered, dark grey, SILTSTONE; very weak		9.0	8.75-9.5m, Chaotically Fractured, JN, 0-10°, PL, R3			100		0		
East Coast Bays Formation Bedrock			9.5								
	slightly weathered, dark grey, fine grained, SANDSTONE; very weak		10.0	9.86-10.00m, 3DI, 90°, PL, R4		SPT				SPT at 9.5-9.86m 17/30/20 for 60mm N>50	
	becoming unweathered, weak		10.5	2JN, 80°, PL, R4 10.2-10.7m, 2JN, 20°, PL, R4, CL (infill 2-3 thick)		88		38			
	becoming fine to medium grained		11.0	Screened from 1.5-15.5m							
			11.5	11.4-12.3m, 2JN, 10°-20°, PL, R1-R2, Chaotically Fractured		SPT				SPT at 11.0-11.40m 20/29/21 for 115mm N>50	
	unweathered, dark grey, SILTSTONE; weak		12.0	Gravel Backfill		99		30			
	unweathered, dark grey, SANDSTONE; weak, with trace carbonaceous inclusions		12.5	12.4-12.5m, 2DI, 90°, PL, R4		SPT				SPT at 12.5-12.60m 50 for 100mm N>50	
	unweathered, dark grey, SILTSTONE; very weak, with occasional laminated beds of fine sand		13.0	13.0-13.2m, Chaotically Fractured 1JN, 45°, PL, R1, CL							
with moderately thick bed of hard, low plasticity, clayey SILT		13.5	13.3-14.0m, 3DI/CN, 90°, PL, R4, with laminated sand beds 13.4-13.5m, 1JN, 0°, PL, R2, CL		100		71				
		14.0			SPT				SPT at 14.0-14.34m 23/41/9 for 35mm N>50		
with moderately thin bed of hard, low plasticity, clayey SILT		14.5	14.6-14.7m, 1JN, 45°, PL, R2								
		15.0	14.9-15.1m, 2DI/CN, 90°, PL, R4, with laminated sand beds 2JN, 0°, PL, R2, CH 15.3-15.5m, 3DI, 90°, PL, R4		92		91				
		15.5	EOB at 15.5m. Target Depth.		SPT				SPT at 15.5-15.74m 26/50 for 85mm N>50		
		16.0									



Comments:
Some water loss at 11.4-12.5m.

Driller: Pro-Drill Rig: Tractor Rig

Drilling Fluid:	Topsoil	Sand	Sandstone	Plutonic
	water	Gravel	Siltstone	No Core
Checked:	Clay	Organic	Limestone	
	Silt	Pumice	Volcanic	

Client : GREEN CITY DEVELOPMENTS LIMITED

Project Location : 125 MURPHYS ROAD (STAGE 2),
FLAT BUSH


Job Number: J00862

Machine Borehole No. MH02

Sheet 1 of 2

Vane Head: 1900 | Logged By: JL | Processor: LJ | Start Date: 13.02.18
Finish Date: 13.02.18

Stratigraphy	Borehole Location:	mN		mE		Ground R.L.		Groundwater/ Piezometer	Drilling Method & Casing	Recovery (%)	RQD (%)	Sample and Laboratory Test Details	Vane Dial / Sensitivity & SPT
		Description: Refer to site plan		Orientation: vertical									
CORE DESCRIPTION				Legend	Depth (m)	DEFECTS							
Slump Debris	TOPSOIL												
	silty CLAY, orange. Very stiff, moist, high plasticity, insensitive becoming light grey streaked orange, with trace fine sand, with trace limonite					0.5					72		89/66 - 1.3
	becoming very stiff, with minor sand sized white pumiceous inclusions					1.0					72		113/69 - 1.6
	becoming stiff, moderately sensitive					1.5					72		
	clayey SILT, orange mottled light grey. Very stiff, moist, low plasticity, with trace fine sand					2.0					SPT		75/37 - 2.0 SPT at 1.5-1.45m 1/2/6 N=8
Transitional E.C.B.F.	silty fine SAND, orange streaked light grey. Medium dense, moist, no plasticity, with minor limonite					2.5					51		
	clayey SILT, dark grey. Hard, moist, low plasticity, with trace limonite to 3.3m					3.0					SPT		81/26 - 3.1 SPT at 3.0-3.45m 2/3/6 N=9
	slightly weathered, dark grey, SANDSTONE; extremely to very weak, with trace carbonaceous inclusions					4.0					91		
	becoming weak					4.5					93	37	UTP
	slightly weathered, dark grey, SILTSTONE; very weak					5.0					SPT		SPT at 5.0-5.44m 15/23/27 for 140mm N>50
East Coast Bays Formation Bedrock	at 6.2m, with moderately thin bed of very weak SANDSTONE					6.0					85	0	
	slightly weathred, dark grey, SILTSTONE; very weak					6.5					SPT		SPT at 6.5-6.94m 28/28/22 for 140mm N>50
	with thin bed of soft, high plasticity clay					7.0					100	47	
	with moderately thick bed of hard, low plasticity, clayey SILT					7.5							
	slightly weathered, dark grey, SANDSTONE; very weak, with trace carbonaceous inclusions					8.0							

	Comments:		Drilling Fluid:	Topsoil	Sand	Sandstone	Plutonic	+++++
			water	Fill	Gravel	Siltstone	No Core	
			Checked:	Clay	Organic	Limestone		
	Driller: Pro-Drill	Rig: Tractor Rig	JL	Silt	Pumice	Volcanic		

Client : GREEN CITY DEVELOPMENTS LIMITED

Machine Borehole No. MH02

Project Location : 125 MURPHYS ROAD (STAGE 2),
FLAT BUSH

Sheet 2 of 2

Job Number: J00862

Vane Head: 1900
 Logged By: JL
 Processor: LJ
 Start Date: 13.02.18
 Finish Date: 13.02.18

Stratigraphy	Borehole Location:	mN	mE	Ground R.L.	Groundwater/ Piezometer	Drilling Method & Casing	Recovery (%)	RQD (%)	Sample and Laboratory Test Details	Vane Dial / Sensitivity & SPT	
	Description:	Refer to site plan		Orientation: vertical							
CORE DESCRIPTION				Legend	Depth (m)	DEFECTS					
East Coast Bays Formation Bedrock	clayey SILT, dark grey. Hard, moist, low plasticity with moderately thin bed of weak, dark grey SILTSTONE				[Pattern]	8.5	8.14-9.0m, 9DI, 90°, PL, R3-R4	TRIPLE TUBE	SPT	SPT	SPT at 8.0-8.14m 50 for 135mm N>50
	unweathered, dark grey, SILTSTONE; weak				[Pattern]	9.0	9.0-9.5m, 4DI, 90°, PL, R4		100	45	
	slightly weathered, dark grey, fine to medium grained, SANDSTONE; very weak				[Pattern]	9.5	9.82-11.0m, 4DI, 90°, PL, R4		SPT	SPT	SPT at 9.5-9.82m 32/41/9 for 20mm N>50
	with moderately thin bed of dark grey, dense fine SAND				[Pattern]	10.5	Screened from 1.5-12.5m		62	41	
	unweathered, dark grey, SILTSTONE; weak				[Pattern]	11.0	1CN, 90°, PL, R4		SPT	SPT	SPT at 11.0-11.13m 50 for 125mm N>50
	unweathered, dark grey, SANDSTONE; weak, with occasional thin beds of dense fine SAND				[Pattern]	11.5	Gravel Backfill		93	73	
	EOB at 12.5m. Target Depth.				[Pattern]	12.0	1CN, 90°, PL, R4		SPT	SPT	SPT at 12.5-12.63m 50 for 125mm N>50
					[Pattern]	12.5					
					[Pattern]	13.0					
					[Pattern]	13.5					
				[Pattern]	14.0						
				[Pattern]	14.5						
				[Pattern]	15.0						
				[Pattern]	15.5						
				[Pattern]	16.0						



Comments:
Water loss started at 12.0m.

Driller: Pro-Drill
Rig: Tractor Rig

Drilling Fluid:	Topsoil	Sand	Sandstone	Plutonic
water	Fill	Gravel	Siltstone	No Core
Checked:	Clay	Organic	Limestone	
JL	Silt	Pumice	Volcanic	