

PROJECT:	Blythe Street, Wombwell	Job No. 38506	Date 20-21.08.15
SUBJECT:	Infiltration Test Results and Calculation of Infiltration Rates	Prepared MM	Checked CAT

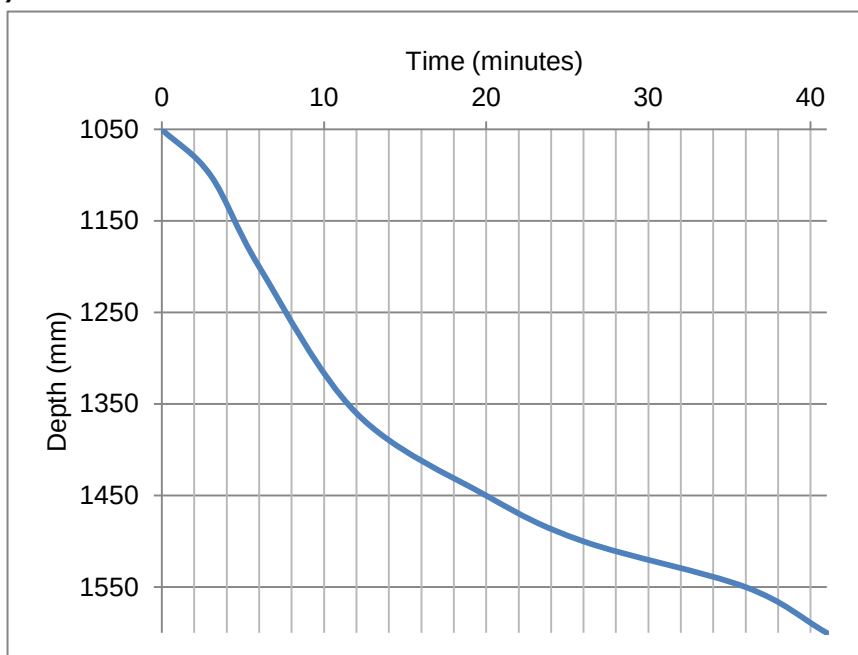
Test No. SA10T1

Test Pit Dimensions

Length = **1700** mm Plan area = **1.105** m²
 Width = **650** mm
 Depth = **1600** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **1050** mm

Time (min)	Depth (mm)
0	1050
3	1100
6	1200
12	1360
20	1450
26	1500
36	1550
41	1600



Test Pit Log

Depth (m)	Description
0-0.3	TOPSOIL with occasional brick fragments
0.3-0.75	MADE GROUND: Brown slightly clayey gravelly sand. Gravel is fine to coarse subangular of sandstone with brick fragments and occasionally concrete.
0.75-1.6	Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA10T1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1050** mm Average water depth: **275** mm
Start time = **0** min Change in water depth: **550** mm

Final parameters

Depth to water = **1600** mm Time interval: **41** min
End time = **41** min

Effective Storage Volume of Water in the Trial Pit = **0.60775** m³
75% Effective Depth = **1188** mm from ground level
25% Effective Depth = **1463** mm from ground level
Time at 75% Effective Depth = **6** minutes
Time at 25% Effective Depth = **21.6** minutes

V_{p75-25} = **0.30** m³

a_{p50} = **2.40** m²

t_{p75-25} = **960** sec

f = **1.3E-04** m/sec

Average Soakaway Rate = **2.5E-04** m³/sec
Average soakaway area = **2.40** m² (sides + base)

BR365 Soil Infiltration Rate = 1.3E-04 m/sec
Average Infiltration Rate = 1.0E-04 m/sec

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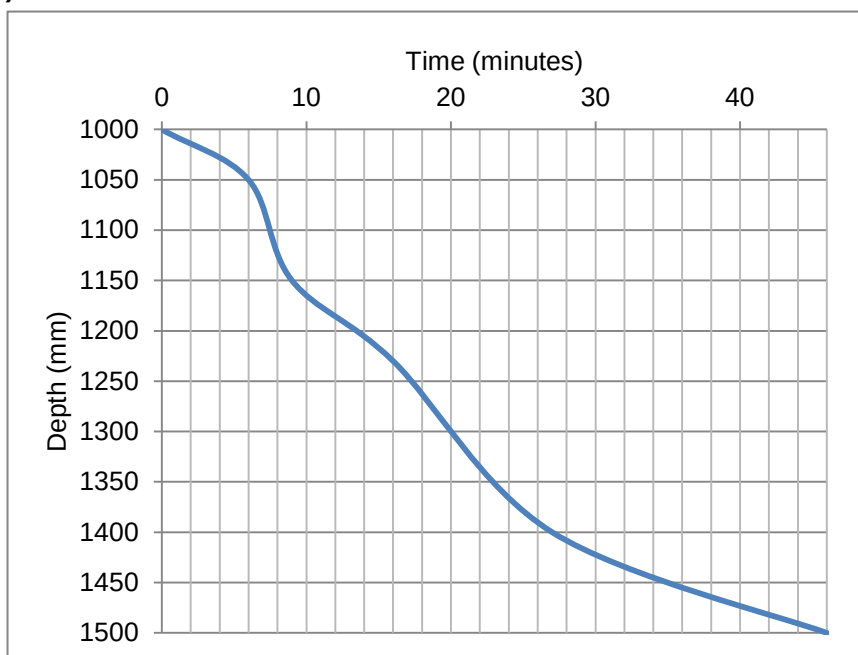
Test No. SA10T2

Test Pit Dimensions

Length = **1700** mm Plan area = **1.105** m²
 Width = **650** mm
 Depth = **1500** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **1000** mm

Time (min)	Depth (mm)
0	1000
6	1050
9	1150
16	1230
27	1400
46	1500



Test Pit Log

Depth (m)	Description
0-0.3	TOPSOIL with occasional brick fragments
0.3-0.75	MADE GROUND: Brown slightly clayey gravelly sand. Gravel is fine to coarse subangular of sandstone with brick fragments and occasionally concrete.
0.75-1.5	Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA10T2

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1000** mm Average water depth: **250** mm
Start time = **0** min Change in water depth: **500** mm

Final parameters

Depth to water = **1500** mm Time interval: **46** min
End time = **46** min

Effective Storage Volume of Water in the Trial Pit = **0.5525** m³
75% Effective Depth = **1125** mm from ground level
25% Effective Depth = **1375** mm from ground level
Time at 75% Effective Depth = **8** minutes
Time at 25% Effective Depth = **25.4** minutes

V_{p75-25} = **0.28** m³

a_{p50} = **2.28** m²

t_{p75-25} = **1029** sec

f = **1.2E-04** m/sec

Average Soakaway Rate = **2.0E-04** m³/sec
Average soakaway area = **2.28** m² (sides + base)

BR365 Soil Infiltration Rate = 1.2E-04 m/sec
Average Infiltration Rate = 8.8E-05 m/sec

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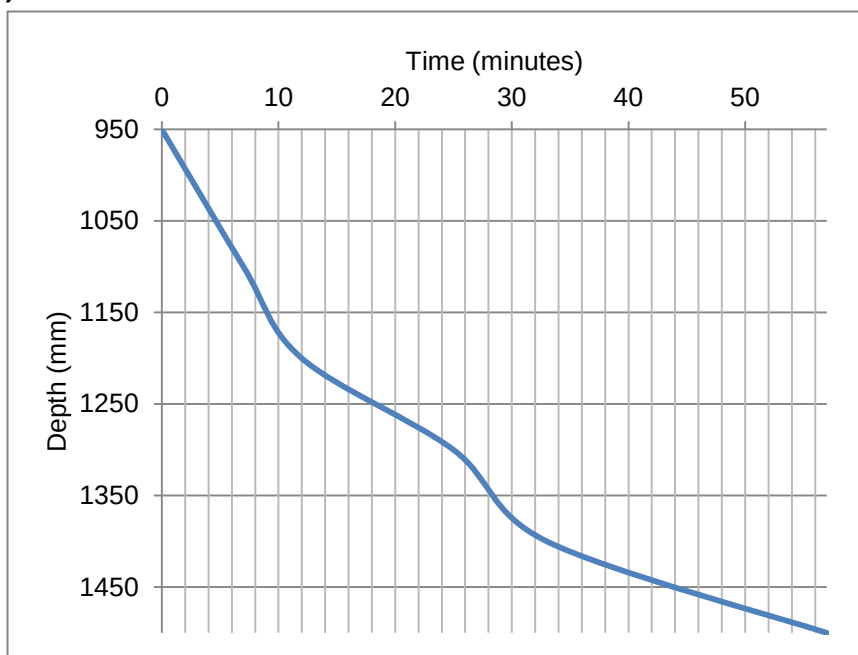
Test No. SA10T3

Test Pit Dimensions

Length = **1700** mm Plan area = **1.105** m²
 Width = **650** mm
 Depth = **1500** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **950** mm

Time (min)	Depth (mm)
0	950
7	1100
12	1200
25	1300
33	1400
57	1500



Test Pit Log

Depth (m)	Description
0-0.3	TOPSOIL with occasional brick fragments
0.3-0.75	MADE GROUND: Brown slightly clayey gravelly sand. Gravel is fine to coarse subangular of sandstone with brick fragments and occasionally concrete.
0.75-1.5	Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA10T3

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **950 mm** Average water depth: **275 mm**
Start time = **0 min** Change in water depth: **550 mm**

Final parameters

Depth to water = **1500 mm** Time interval: **57 min**
End time = **57 min**

Effective Storage Volume of Water in the Trial Pit = **0.60775 m³**
75% Effective Depth = **1088 mm** from ground level
25% Effective Depth = **1363 mm** from ground level
Time at 75% Effective Depth = **6 minutes**
Time at 25% Effective Depth = **30 minutes**

V_{p75-25} = **0.30 m³**

a_{p50} = **2.40 m²**

t_{p75-25} = **1416 sec**

f = **9.0E-05 m/sec**

Average Soakaway Rate = **1.8E-04 m³/sec**
Average soakaway area = **2.40 m²** (sides + base)

BR365 Soil Infiltration Rate = 9.0E-05 m/sec
Average Infiltration Rate = 7.4E-05 m/sec

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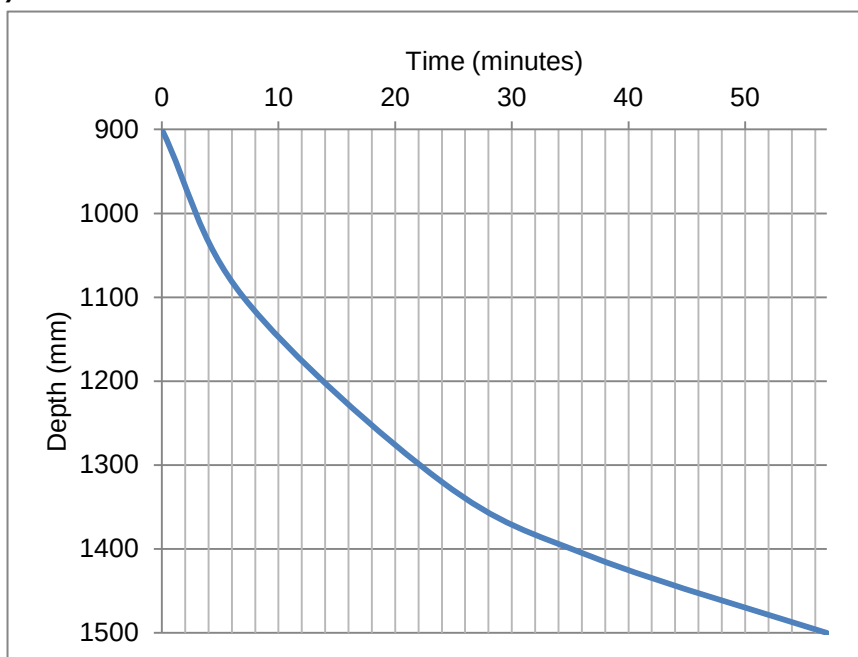
Test No. SA10T4

Test Pit Dimensions

Length = **1700** mm Plan area = **1.105** m²
 Width = **650** mm
 Depth = **1500** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **900** mm

Time (min)	Depth (mm)
0	900
7	1100
24	1320
37	1410
57	1500



Test Pit Log

Depth (m)	Description
0-0.3	TOPSOIL with occasional brick fragments
0.3-0.75	MADE GROUND: Brown slightly clayey gravelly sand. Gravel is fine to coarse subangular of sandstone with brick fragments and occasionally concrete.
0.75-1.5	Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA10T4

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **900** mm Average water depth: **300** mm
Start time = **0** min Change in water depth: **600** mm

Final parameters

Depth to water = **1500** mm Time interval: **57** min
End time = **57** min

Effective Storage Volume of Water in the Trial Pit = **0.663** m³
75% Effective Depth = **1050** mm from ground level
25% Effective Depth = **1350** mm from ground level
Time at 75% Effective Depth = **5** minutes
Time at 25% Effective Depth = **28.3** minutes

V_{p75-25} = **0.33** m³

a_{p50} = **2.52** m²

t_{p75-25} = **1383** sec

f = **9.5E-05** m/sec

Average Soakaway Rate = **1.9E-04** m³/sec
Average soakaway area = **2.52** m² (sides + base)

BR365 Soil Infiltration Rate = 9.5E-05 m/sec
Average Infiltration Rate = 7.7E-05 m/sec

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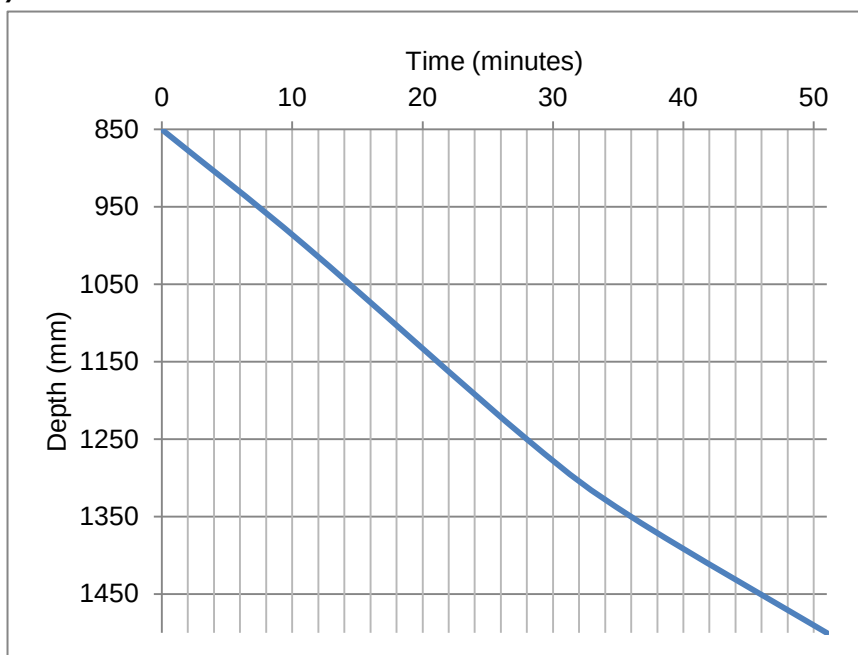
Test No. SA10T5

Test Pit Dimensions

Length = **1700** mm Plan area = **1.105** m²
 Width = **650** mm
 Depth = **1500** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **850** mm

Time (min)	Depth (mm)
0	850
11	1000
28	1250
36	1350
51	1500



Test Pit Log

Depth (m)	Description
0-0.3	TOPSOIL with occasional brick fragments
0.3-0.75	MADE GROUND: Brown slightly clayey gravelly sand. Gravel is fine to coarse subangular of sandstone with brick fragments and occasionally concrete.
0.75-1.6	Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA10T5

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **850** mm Average water depth: **325** mm
Start time = **0** min

Change in water depth: **650** mm

Final parameters

Depth to water = **1500** mm Time interval: **51** min
End time = **51** min

Effective Storage Volume of Water in the Trial Pit = **0.71825** m³
75% Effective Depth = **1013** mm from ground level
25% Effective Depth = **1338** mm from ground level
Time at 75% Effective Depth = **12** minutes
Time at 25% Effective Depth = **35** minutes

V_{p75-25} = **0.36** m³

a_{p50} = **2.63** m²

t_{p75-25} = **1386** sec

f = **9.8E-05** m/sec

Average Soakaway Rate = **2.3E-04** m³/sec
Average soakaway area = **2.63** m² (sides + base)

BR365 Soil Infiltration Rate = 9.8E-05 m/sec
Average Infiltration Rate = 8.9E-05 m/sec

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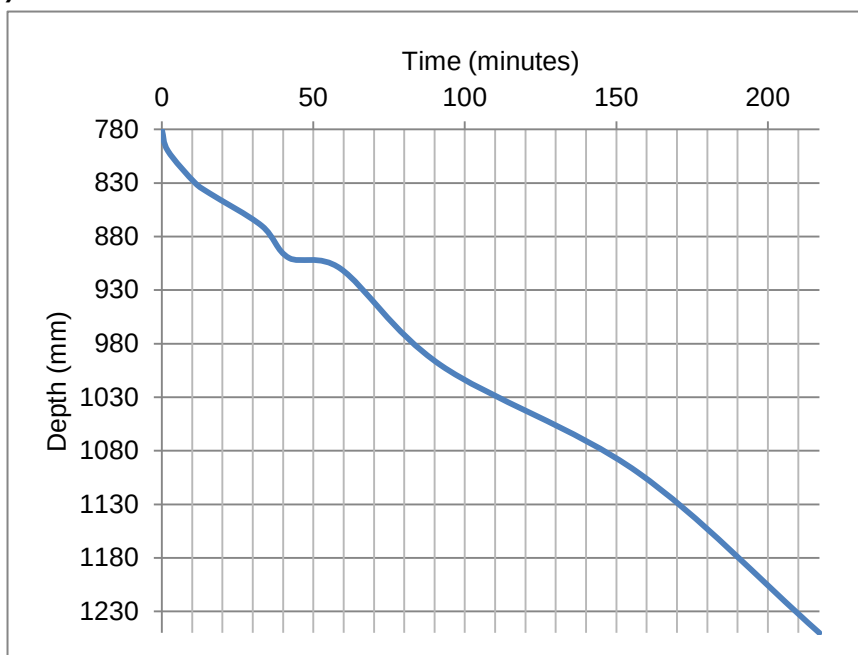
Test No. SA11T1

Test Pit Dimensions

Length = **1700** mm Plan area = **1.02** m²
 Width = **600** mm
 Depth = **1300** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **780** mm

Time (min)	Depth (mm)
0	780
2	800
11	830
16	840
33	870
42	900
59	910
92	1000
157	1100
217	1250



Test Pit Log

Depth (m)	Description
0-0.25	TOPSOIL
0.25-0.6	MADE GROUND: Brown blackish fine to coarse subangular gravel of sandstone and sand with brick, concrete and metal fragments.
0.6-1.3	Weak brown grey SANDSTONE recovered as subangular silty very sandy gravel.

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Test No. SA11T1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **780** mm Average water depth: **285** mm
Start time = **0** min Change in water depth: **470** mm

Final parameters

Depth to water = **1250** mm Time interval: **217** min
End time = **217** min

Effective Storage Volume of Water in the Trial Pit = **0.5304** m³
75% Effective Depth = **910** mm from ground level
25% Effective Depth = **1170** mm from ground level
Time at 75% Effective Depth = **59** minutes
Time at 25% Effective Depth = **185** minutes

V_{p75-25} = **0.27** m³

a_{p50} = **2.22** m²

t_{p75-25} = **7560** sec

f = **1.6E-05** m/sec

Average Soakaway Rate = **3.7E-05** m³/sec
Average soakaway area = **2.33** m² (sides + base)

BR365 Soil Infiltration Rate = 1.6E-05 m/sec
Average Infiltration Rate = 1.6E-05 m/sec

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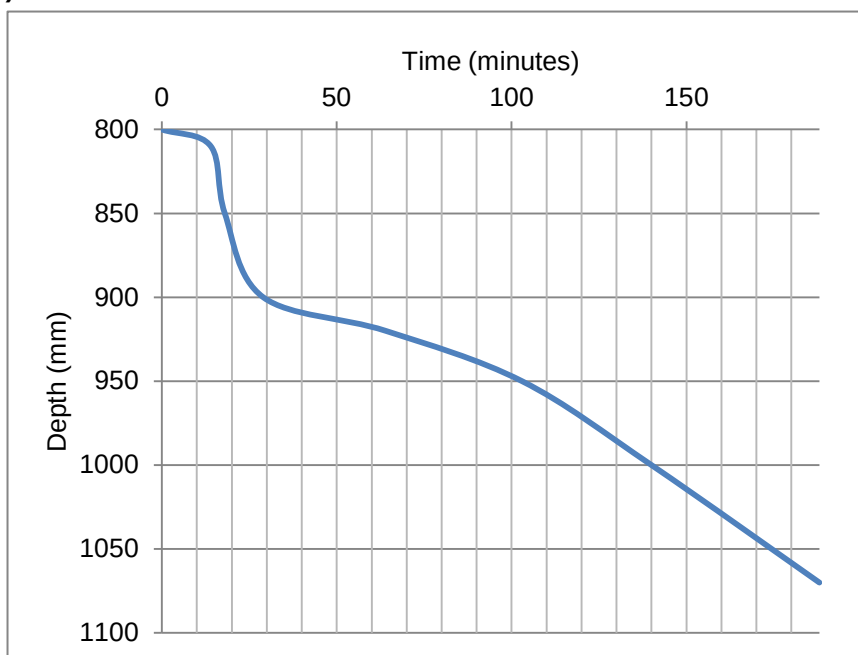
Test No. SA11T2

Test Pit Dimensions

Length = **1700** mm Plan area = **1.02** m²
 Width = **600** mm
 Depth = **1300** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **800** mm

Time (min)	Depth (mm)
0	800
14	810
18	850
29	900
64	920
103	950
140	1000
188	1070



Test Pit Log

Depth (m)	Description
0-0.25	TOPSOIL
0.25-0.6	MADE GROUND: Brown blackish fine to coarse subangular gravel of sandstone and sand with brick, concrete and metal fragments.
0.6-1.3	Weak brown grey SANDSTONE recovered as subangular silty very sandy gravel.

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Test No. SA11T2

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **800** mm Average water depth: **365** mm
Start time = **0** min Change in water depth: **270** mm

Final parameters

Depth to water = **1070** mm Time interval: **188** min
End time = **188** min

Effective Storage Volume of Water in the Trial Pit = **0.51** m³
75% Effective Depth = **925** mm from ground level
25% Effective Depth = **1175** mm from ground level
Time at 75% Effective Depth = **71** minutes
Time at 25% Effective Depth = **N/A** minutes

V_{p75-25} = **0.26** m³

a_{p50} = **2.17** m²

t_{p75-25} = **-4230** sec

f = **-2.8E-05** m/sec

Average Soakaway Rate = **2.4E-05** m³/sec
Average soakaway area = **2.70** m² (sides + base)

BR365 Soil Infiltration Rate = n/a m/sec
Average Infiltration Rate = 9.0E-06 m/sec

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Test No. SA12T1

Test Pit Dimensions

Length = 1700 mm

Plan area = 1.02 m²

Width = 600 mm

Depth = 1700 mm (Total depth)

Approximate time to discharge water into the hole:

35 Seconds

Depth to water after completion of pumping:

1180 mm

Time (min) Depth (mm)

0 1180

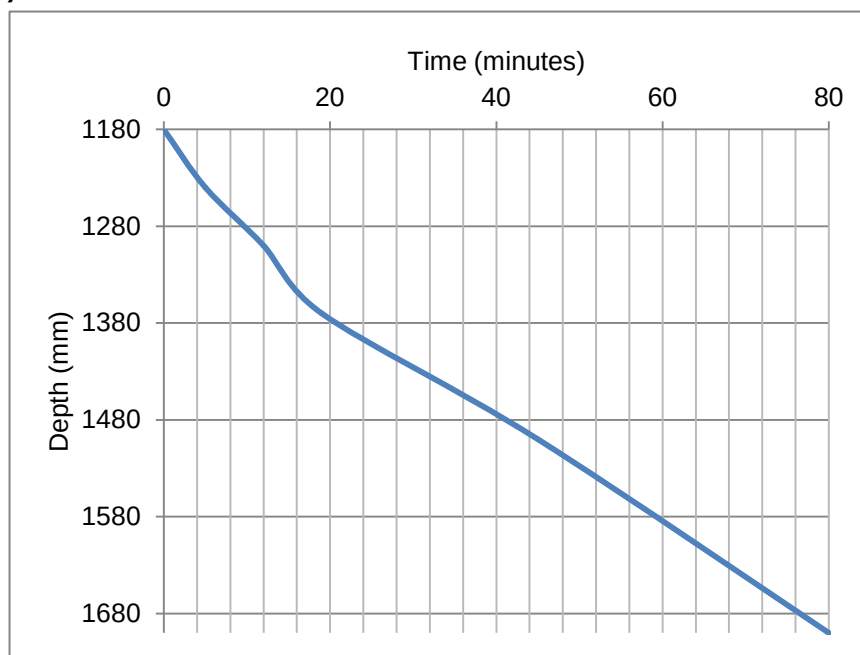
5 1240

12 1300

19 1370

45 1500

80 1700

**Test Pit Log****Depth (m)****Description**

0-0.25

TOPSOIL

0.25-0.6

MADE GROUND: Brown fine to coarse subangular gravel of sandstone and sand with brick fragments.

0.6-1.7

Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA12T1

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1180** mm Average water depth: **260** mm
Start time = **0** min
Change in water depth: **520** mm

Final parameters

Depth to water = **1700** mm Time interval: **80** min
End time = **80** min

Effective Storage Volume of Water in the Trial Pit = **0.5304** m³
75% Effective Depth = **1310** mm from ground level
25% Effective Depth = **1570** mm from ground level
Time at 75% Effective Depth = **11** minutes
Time at 25% Effective Depth = **57** minutes

V_{p75-25} = **0.27** m³

a_{p50} = **2.22** m²

t_{p75-25} = **2790** sec

f = **4.3E-05** m/sec

Average Soakaway Rate = **1.1E-04** m³/sec
Average soakaway area = **2.22** m² (sides + base)

BR365 Soil Infiltration Rate = 4.3E-05 m/sec
Average Infiltration Rate = 5.0E-05 m/sec

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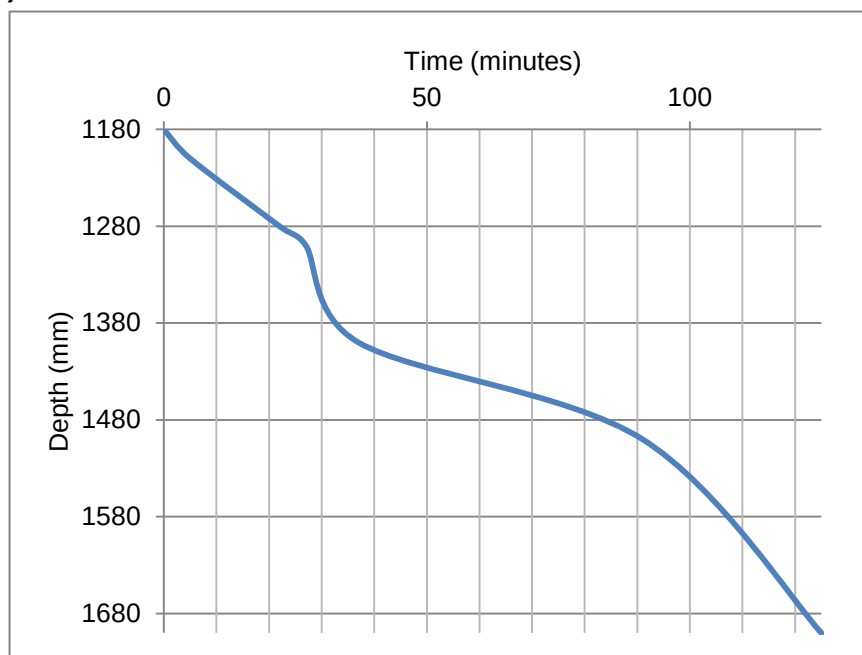
Test No. SA12T2

Test Pit Dimensions

Length = **1700** mm Plan area = **1.02** m²
 Width = **600** mm
 Depth = **1700** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **1180** mm

Time (min)	Depth (mm)
0	1180
5	1210
22	1280
27	1300
37	1400
91	1500
125	1700



Test Pit Log

Depth (m)	Description
0-0.25	TOPSOIL
0.25-0.6	MADE GROUND: Brown fine to coarse subangular gravel of sandstone and sand with brick fragments.
0.6-1.7	Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA12T2

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1180** mm Average water depth: **260** mm
Start time = **0** min Change in water depth: **520** mm

Final parameters

Depth to water = **1700** mm Time interval: **125** min
End time = **125** min

Effective Storage Volume of Water in the Trial Pit = **0.5304** m³
75% Effective Depth = **1310** mm from ground level
25% Effective Depth = **1570** mm from ground level
Time at 75% Effective Depth = **28** minutes
Time at 25% Effective Depth = **103** minutes

V_{p75-25} = **0.27** m³

a_{p50} = **2.22** m²

t_{p75-25} = **4494** sec

f = **2.7E-05** m/sec

Average Soakaway Rate = **7.1E-05** m³/sec
Average soakaway area = **2.22** m² (sides + base)

BR365 Soil Infiltration Rate = 2.7E-05 m/sec
Average Infiltration Rate = 3.2E-05 m/sec

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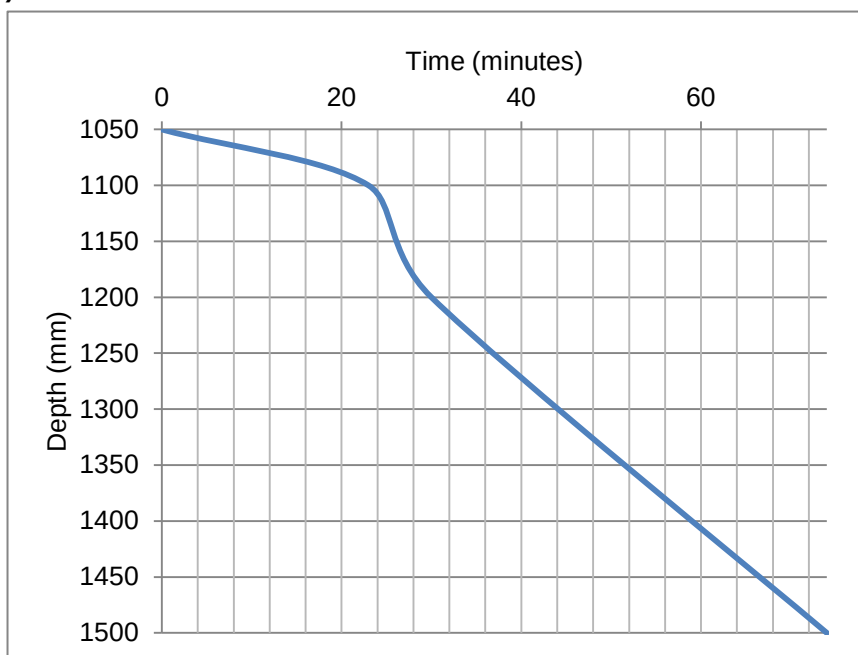
Test No. SA12T3

Test Pit Dimensions

Length = **1800** mm Plan area = **1.17** m²
 Width = **650** mm
 Depth = **1700** mm (Total depth)

Approximate time to discharge water into the hole: **35** Seconds
 Depth to water after completion of pumping: **1050** mm

Time (min)	Depth (mm)
0	1050
23	1100
30	1200
74	1500



Test Pit Log

Depth (m)	Description
0-0.25	TOPSOIL
0.25-0.6	MADE GROUND: Brown fine to coarse subangular gravel of sandstone and sand with brick fragments.
0.6-1.7	Moderately strong brown grey SANDSTONE recovered as subangular very sandy gravel and, occasionally, cobbles.

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Test No. SA12T3

Soil Infiltration Rate in Accordance with BR365

$$f = \frac{V_{p75-25}}{a_{p50} \times t_{p75-25}}$$

Where: V_{p75-25} is the effective storage volume of water in the trial pit between 75% and 25% effective depth;

a_{p50} is the internal surface area of the trial pit up to 50% effective depth and including the base area

t_{p75-25} is the time for the water level to fall from 75% to 25% effective depth

Initial parameters

Depth to water = **1050** mm Average water depth: **425** mm
Start time = **0** min Change in water depth: **450** mm

Final parameters

Depth to water = **1500** mm Time interval: **74** min
End time = **74** min

Effective Storage Volume of Water in the Trial Pit = **0.7605** m³
75% Effective Depth = **1213** mm from ground level
25% Effective Depth = **1538** mm from ground level
Time at 75% Effective Depth = **32** minutes
Time at 25% Effective Depth = **N/A** minutes

V_{p75-25} = **0.38** m³

a_{p50} = **2.76** m²

t_{p75-25} = **-1920** sec

f = **-7.2E-05** m/sec

Average Soakaway Rate = **1.2E-04** m³/sec
Average soakaway area = **3.25** m² (sides + base)

BR365 Soil Infiltration Rate = n/a m/sec
Average Infiltration Rate = 3.6E-05 m/sec

Appendix 5

Chemical Testing Results, Chemtest Reports 15-12320 and 15-19717

Table of Assessment Values

Modified Mean Calculations



Final Report

Report Number: 15-12320 Issue-1

Initial Date of Issue: 04-Jun-2015

Client: Eastwood & Partners

Client Address: St. Andrews House
23 Kingfield Road
Sheffield
South Yorkshire
S11 9AS

Contact(s): Miltiadis Mellios

Project: 38506/CAT/MM- Blythe Street Wombwell

Quotation No.: **Date Received:** 29-May-2015

Order No.: **Date Instructed:** 29-May-2015

No. of Samples: 16

Turnaround: (Wkdays) 5 **Results Due Date:** 04-Jun-2015

Date Approved: 04-Jun-2015

Approved By:

Details: Darrell Hall, Laboratory Director

Results Summary - Soil

Project: 38506/CAT/MM- Blythe Street Wombwell

Client: Eastwood & Partners	Chemtest Job No.:				15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320
Quotation No.:	Chemtest Sample ID.:				146566	146567	146568	146569	146570	146571	146572	146573	146574	146575
Order No.:	Client Sample Ref.:				TP1	TP2	TP6	TP8	TP9	TP4	TP1	TP3	TP5	TP6
	Client Sample ID.:				1	2	3	4	5	6	7	8	9	10
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.3	0.3	0.6
	Bottom Depth(m):													
	Date Sampled:				26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15
Determinand	Accred.	SOP	Units	LOD										
ACM Type	U	2192									-		-	
Asbestos Identification	U	2192	%	0.001							No Asbestos Detected		No Asbestos Detected	
Moisture	N	2030	%	0.02	30	14	15	14	21	13	10	7.2	6.6	13
Soil Colour	N				black	black	black	black	black	black	black	brown	brown	brown
Other Material	N				stones	roots	none	none	none	none	none	none	stones roots	stones
Soil Texture	N				loam	loam	loam	loam	loam	loam	loam	gravel	sand	sand
pH	M	2010			7.5	6.5	6.6	7.3	6.7	7.3	8.0	8.8	8.6	8.1
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01							0.031	1.0	0.41	0.099
Total Sulphur	M	2175	%	0.01							0.030	0.16	0.050	0.050
Sulphate (Acid Soluble)	M	2430	%	0.01							0.033	0.44	0.14	0.10
Arsenic	M	2450	mg/kg	1	13	12	13	13	9.8	13	5.4	12	4.3	9.0
Cadmium	M	2450	mg/kg	0.1	0.23	0.19	0.20	0.18	0.15	0.19	< 0.10	0.60	< 0.10	0.12
Chromium	M	2450	mg/kg	1	14	12	13	12	9.9	12	14	25	13	11
Copper	M	2450	mg/kg	0.5	24	20	22	20	16	19	30	260	12	15
Mercury	M	2450	mg/kg	0.1	0.17	0.13	0.13	0.14	0.11	0.15	< 0.10	0.16	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.5	22	20	21	21	18	20	22	26	21	18
Lead	M	2450	mg/kg	0.5	55	47	49	47	39	46	35	120	27	190
Selenium	M	2450	mg/kg	0.2	0.39	0.38	0.41	0.40	0.29	0.39	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.5	76	66	72	68	58	65	61	240	56	140
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2800	mg/kg	0.1	0.81	0.50	0.54	0.91	0.33	0.64	0.13	0.44	< 0.10	0.30
Acenaphthylene	N	2800	mg/kg	0.1	0.12	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.18	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.1	1.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.31	< 0.10	0.53
Fluorene	M	2800	mg/kg	0.1	0.99	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.30	< 0.10	0.55
Phenanthrene	M	2800	mg/kg	0.1	11	0.81	0.61	1.2	0.49	1.2	0.38	3.5	0.37	8.3
Anthracene	M	2800	mg/kg	0.1	2.6	0.14	< 0.10	0.24	< 0.10	0.16	< 0.10	1.1	< 0.10	2.4
Fluoranthene	M	2800	mg/kg	0.1	13	1.2	0.71	2.1	0.87	1.1	0.72	7.1	0.63	12
Pyrene	M	2800	mg/kg	0.1	10	0.95	0.71	1.6	0.67	0.92	0.62	5.8	0.51	9.9
Benzo[a]anthracene	M	2800	mg/kg	0.1	5.8	0.55	0.31	0.90	0.38	0.49	0.28	3.7	0.22	5.3
Chrysene	M	2800	mg/kg	0.1	4.9	0.48	0.23	0.77	0.31	0.52	0.21	3.2	0.15	4.3
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	5.1	0.68	0.38	1.0	0.42	0.54	0.31	4.8	0.24	5.1
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	2.0	0.20	< 0.10	0.27	0.13	0.14	< 0.10	1.8	< 0.10	2.3

Results Summary - Soil

Project: 38506/CAT/MM- Blythe Street Wombwell

Client: Eastwood & Partners	Chemtest Job No.:				15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320
Quotation No.:	Chemtest Sample ID.:				146566	146567	146568	146569	146570	146571	146572	146573	146574	146575
Order No.:	Client Sample Ref.:				TP1	TP2	TP6	TP8	TP9	TP4	TP1	TP3	TP5	TP6
	Client Sample ID.:				1	2	3	4	5	6	7	8	9	10
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.1	0.1	0.1	0.1	0.1	0.1	0.6	0.3	0.3	0.6
	Bottom Depth(m):													
	Date Sampled:				26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15
Determinand	Accred.	SOP	Units	LOD										
Benzo[a]pyrene	M	2800	mg/kg	0.1	6.4	0.62	0.30	0.98	0.39	0.50	0.30	5.1	0.20	6.2
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	3.0	0.34	0.16	0.39	0.20	0.25	0.11	2.8	0.11	2.7
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.40	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.41	< 0.10	0.39
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	2.4	0.30	0.13	0.36	0.16	0.24	0.10	2.1	< 0.10	2.1
Total Of 16 PAH's	N	2800	mg/kg	2	70	6.8	4.1	11	4.4	6.7	3.2	43	2.4	62

Results Summary - Soil

Project: 38506/CAT/MM- Blythe Street Wombwell

Client: Eastwood & Partners	Chemtest Job No.:		15-12320	15-12320	15-12320	15-12320	15-12320	15-12320	15-12320
Quotation No.:	Chemtest Sample ID.:		146576	146577	146578	146579	146580	146581	146581
Order No.:	Client Sample Ref.:		TP9	TP10	TP7	TP2	TP3	TP8	TP8
	Client Sample ID.:		11	12	1	2	3	4	4
	Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):		0.5	0.3	1.8	0.6	0.9	1.05	1.05
	Bottom Depth(m):								
	Date Sampled:		26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15
Determinand	Accred.	SOP	Units	LOD					
ACM Type	U	2192				-			
Asbestos Identification	U	2192	%	0.001		No Asbestos Detected			
Moisture	N	2030	%	0.02	14	8.9	9.5	8.3	6.4
Soil Colour	N				brown	brown	brown	brown	brown
Other Material	N				stones	stones	stones	stones	stones
Soil Texture	N				clsy	sand	sand	sand	sand
pH	M	2010			7.6	11.0	8.0	7.7	7.8
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01	< 0.010	1.3	0.034	< 0.010	0.24
Total Sulphur	M	2175	%	0.01	0.030	0.29	0.020	< 0.010	0.040
Sulphate (Acid Soluble)	M	2430	%	0.01	0.025	1.3	< 0.010	< 0.010	0.078
Arsenic	M	2450	mg/kg	1	7.6	9.4	1.5	6.3	3.1
Cadmium	M	2450	mg/kg	0.1	0.12	0.10	< 0.10	< 0.10	0.24
Chromium	M	2450	mg/kg	1	15	15	9.4	15	11
Copper	M	2450	mg/kg	0.5	13	20	0.7	10	34
Mercury	M	2450	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.5	25	19	19	41	23
Lead	M	2450	mg/kg	0.5	31	37	12	42	27
Selenium	M	2450	mg/kg	0.2	0.21	< 0.20	< 0.20	< 0.20	< 0.20
Zinc	M	2450	mg/kg	0.5	64	78	34	84	75
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Naphthalene	M	2800	mg/kg	0.1	0.12	< 0.10	< 0.10	< 0.10	0.12
Acenaphthylene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.11
Fluorene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.14
Phenanthrene	M	2800	mg/kg	0.1	0.20	0.12	0.12	< 0.10	2.0
Anthracene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.47
Fluoranthene	M	2800	mg/kg	0.1	0.15	0.22	0.11	< 0.10	2.8
Pyrene	M	2800	mg/kg	0.1	0.10	0.18	< 0.10	< 0.10	2.2
Benzo[a]anthracene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	1.2
Chrysene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.98
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	1.4
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.43

Results Summary - Soil

Project: 38506/CAT/MM- Blythe Street Wombwell

Client: Eastwood & Partners	Chemtest Job No.:				15-12320	15-12320	15-12320	15-12320	15-12320	15-12320
Quotation No.:	Chemtest Sample ID.:				146576	146577	146578	146579	146580	146581
Order No.:	Client Sample Ref.:				TP9	TP10	TP7	TP2	TP3	TP8
	Client Sample ID.:				11	12	1	2	3	4
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.5	0.3	1.8	0.6	0.9	1.05
	Bottom Depth(m):									
	Date Sampled:				26-May-15	26-May-15	26-May-15	26-May-15	26-May-15	26-May-15
Determinand	Accred.	SOP	Units	LOD						
Benzo[a]pyrene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	1.2	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.55	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	0.50	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2	< 2.0	< 2.0	< 2.0	< 2.0	14	< 2.0

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVCOs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at our Coventry laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 60 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.co.uk



Final Report

Report Number: 15-19717 Issue-1

Initial Date of Issue: 03-Sep-2015

Client: Eastwood & Partners

Client Address: St. Andrews House
23 Kingfield Road
Sheffield
South Yorkshire
S11 9AS

Contact(s): Geo
Miltiadis Mellios

Project: 38506/CAT/MM - Blythe Street Wombwell Add GI

Quotation No.: **Date Received:** 26-Aug-2015

Order No.: **Date Instructed:** 26-Aug-2015

No. of Samples: 21

Turnaround: (Wkdays) 5 **Results Due Date:** 02-Sep-2015

Date Approved: 02-Sep-2015

Approved By:

Details: Robert Monk, Technical Development
Chemist

Results Summary - Soil

Project: 38506/CAT/MM - Blythe Street Wombwell Add GI

Client: Eastwood & Partners	Chemtest Job No.:				15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717
Quotation No.:	Chemtest Sample ID.:				183878	183879	183880	183881	183882	183883	183884	183885	183886	183887
Order No.:	Client Sample Ref.:				TP1B	S1	S2	TP1A	TP1C	TP1D	TP1E	TP6A	TP6B	TP6C
	Client Sample ID.:													
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.70	0.50	0.60
	Bottom Depth(m):													
	Date Sampled:				20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.02	13	13	16	13	9.2	8.7	12	8.1	8.0	7.8
Soil Colour	N				Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N				Stones	Roots	Stones	Roots	Roots	Stones	Stones	Stones	Stones	Stones
Soil Texture	N				Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010			9.5	8.5	9.4							
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01										
Total Sulphur	M	2175	%	0.01										
Sulphate (Acid Soluble)	M	2430	%	0.01										
Arsenic	M	2450	mg/kg	1	16	17	17							
Cadmium	M	2450	mg/kg	0.1	0.14	0.14	0.18							
Chromium	M	2450	mg/kg	1	18	19	21							
Copper	M	2450	mg/kg	0.5	26	25	28							
Mercury	M	2450	mg/kg	0.1	0.16	0.16	0.18							
Nickel	M	2450	mg/kg	0.5	21	21	23							
Lead	M	2450	mg/kg	0.5	65	66	73							
Selenium	M	2450	mg/kg	0.2	0.69	0.69	0.78							
Zinc	M	2450	mg/kg	0.5	84	86	93							
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50	< 0.50							
Naphthalene	M	2800	mg/kg	0.1	0.18	0.13	0.17	0.35	0.23	0.24	0.20	0.12	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.35
Fluorene	M	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.15	0.36
Phenanthrene	M	2800	mg/kg	0.1	0.91	1.2	0.79	1.1	2.1	1.7	0.98	0.53	2.5	5.3
Anthracene	M	2800	mg/kg	0.1	0.15	0.23	0.12	0.20	0.43	0.44	0.18	< 0.10	0.58	1.3
Fluoranthene	M	2800	mg/kg	0.1	1.9	2.1	1.7	2.3	4.4	3.1	1.7	1.1	2.8	7.6
Pyrene	M	2800	mg/kg	0.1	1.9	2.1	2.0	2.4	3.8	2.8	1.7	1.3	2.4	6.2
Benzo[a]anthracene	M	2800	mg/kg	0.1	0.56	0.56	0.56	0.74	1.5	1.2	0.49	0.20	0.78	2.5
Chrysene	M	2800	mg/kg	0.1	0.62	0.66	0.59	1.0	1.7	1.4	0.74	0.24	0.79	2.8
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	0.79	0.76	0.74	1.0	1.8	1.6	0.74	0.26	0.71	2.6
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	0.20	0.17	0.17	0.27	0.62	0.45	0.16	< 0.10	0.20	1.1
Benzo[a]pyrene	M	2800	mg/kg	0.1	0.51	0.50	0.40	0.69	1.4	1.1	0.49	0.19	0.48	2.1
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	0.36	0.22	0.23	0.49	0.78	0.58	0.25	0.11	0.24	1.4
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.14

Results Summary - Soil

Project: 38506/CAT/MM - Blythe Street Wombwell Add GI

Client: Eastwood & Partners	Chemtest Job No.:				15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717
Quotation No.:	Chemtest Sample ID.:				183878	183879	183880	183881	183882	183883	183884	183885	183886	183887
Order No.:	Client Sample Ref.:				TP1B	S1	S2	TP1A	TP1C	TP1D	TP1E	TP6A	TP6B	TP6C
	Client Sample ID.:													
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.70	0.50	0.60
	Bottom Depth(m):													
	Date Sampled:				20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15
Determinand	Accred.	SOP	Units	LOD										
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	0.36	0.30	0.27	0.41	0.77	0.59	0.29	0.13	0.27	1.1
Total Of 16 PAH's	N	2800	mg/kg	2	8.4	8.9	7.7	11	20	15	7.9	4.2	12	35

Results Summary - Soil

Project: 38506/CAT/MM - Blythe Street Wombwell Add GI

Client: Eastwood & Partners	Chemtest Job No.:					15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717
Quotation No.:	Chemtest Sample ID.:					183888	183889	183890	183891	183892	183893	183894	183895	183896
Order No.:	Client Sample Ref.:					TP6D	TP6E	TP3A	TP3B	TP3C	TP3D	TP3E	HT2	HT4
	Client Sample ID.:													
	Sample Type:					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):					0.60	0.50	0.40	0.40	0.30	0.35	0.30	0.10	0.10
	Bottom Depth(m):													
	Date Sampled:					20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15
Determinand	Accred.	SOP	Units	LOD										
Moisture	N	2030	%	0.02	8.1	7.1	5.9	5.0	8.1	5.5	4.5	7.7	8.8	8.3
Soil Colour	N				Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown	Brown
Other Material	N				Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones	Stones
Soil Texture	N				Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
pH	M	2010			8.4	8.5		8.5				7.3	7.5	6.7
Sulphate (2:1 Water Soluble) as SO4	M	2120	g/l	0.01	< 0.010	< 0.010		0.018						
Total Sulphur	M	2175	%	0.01	0.030	0.020		0.010						
Sulphate (Acid Soluble)	M	2430	%	0.01	0.064	0.038		0.042						
Arsenic	M	2450	mg/kg	1	12	11		7.6				13	15	14
Cadmium	M	2450	mg/kg	0.1	< 0.10	< 0.10		< 0.10				< 0.10	0.27	0.16
Chromium	M	2450	mg/kg	1	21	17		24				17	17	16
Copper	M	2450	mg/kg	0.5	22	14	460	16	54	520	29	23	21	18
Mercury	M	2450	mg/kg	0.1	< 0.10	< 0.10		< 0.10				0.13	0.23	0.13
Nickel	M	2450	mg/kg	0.5	20	19		16				18	20	18
Lead	M	2450	mg/kg	0.5	270	61		41				56	41	36
Selenium	M	2450	mg/kg	0.2	0.23	0.27		0.26				0.51	0.48	0.28
Zinc	M	2450	mg/kg	0.5	190	86		67				76	70	63
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50	< 0.50		< 0.50				< 0.50	< 0.50	< 0.50
Naphthalene	M	2800	mg/kg	0.1	0.11	0.14	0.49	0.10	0.16	0.35	0.16	0.33	0.16	0.15
Acenaphthylene	N	2800	mg/kg	0.1	< 0.10	< 0.10	0.33	< 0.10	< 0.10	0.38	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.1	0.23	0.39	0.32	< 0.10	< 0.10	1.3	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.1	0.21	0.32	0.35	< 0.10	< 0.10	1.2	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.1	4.2	4.8	5.4	1.4	1.3	12	0.87	0.64	0.27	0.17
Anthracene	M	2800	mg/kg	0.1	1.0	1.2	1.6	0.34	0.27	4.8	0.18	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.1	6.4	7.3	12	3.0	2.6	23	2.0	1.2	0.66	0.50
Pyrene	M	2800	mg/kg	0.1	5.4	6.1	10	2.8	2.5	20	1.8	1.2	0.86	0.53
Benzo[a]anthracene	M	2800	mg/kg	0.1	2.2	2.7	5.9	1.2	1.1	9.8	0.63	0.29	0.14	< 0.10
Chrysene	M	2800	mg/kg	0.1	2.5	3.0	6.6	1.2	1.1	11	0.69	0.41	0.16	0.12
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	2.5	3.2	8.1	1.4	1.3	12	0.91	0.43	0.21	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	0.92	1.2	3.3	0.40	0.41	5.0	0.20	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.1	2.0	2.6	6.7	1.1	0.97	10	0.62	0.28	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	1.2	1.8	5.2	0.69	0.67	7.0	0.36	0.15	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	0.14	0.25	0.92	0.10	< 0.10	1.3	< 0.10	< 0.10	< 0.10	< 0.10

Results Summary - Soil

Project: 38506/CAT/MM - Blythe Street Wombwell Add GI

Client: Eastwood & Partners	Chemtest Job No.:				15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717	15-19717
Quotation No.:	Chemtest Sample ID.:				183888	183889	183890	183891	183892	183893	183894	183895	183896	183897
Order No.:	Client Sample Ref.:				TP6D	TP6E	TP3A	TP3B	TP3C	TP3D	TP3E	HT2	HT4	HT1
	Client Sample ID.:													
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.60	0.50	0.40	0.40	0.30	0.35	0.30	0.10	0.10	0.10
	Bottom Depth(m):													
	Date Sampled:				20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15	20-Aug-15
Determinand	Accred.	SOP	Units	LOD										
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1	1.2	1.5	4.5	0.69	0.62	5.9	0.37	0.21	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2	30	37	72	14	13	130	8.8	5.1	2.5	< 2.0

Project: 38506/CAT/MM - Blythe Street Wombwell Add G

Client: Eastwood & Partners	Chemtest Job No.:		15-19717		
Quotation No.:	Chemtest Sample ID.:		183898		
Order No.:	Client Sample Ref.:		TP11		
	Client Sample ID.:				
	Sample Type:		SOIL		
	Top Depth (m):		0.50		
	Bottom Depth(m):				
	Date Sampled:		20-Aug-15		
Determinand	Accred.	SOP	Units	LOD	
Moisture	N	2030	%	0.02	7.7
Soil Colour	N				Brown
Other Material	N				Stones
Soil Texture	N				Clay
pH	M	2010			9.3
Sulphate (2:1 Water Soluble) as SO ₄	M	2120	g/l	0.01	< 0.010
Total Sulphur	M	2175	%	0.01	0.010
Sulphate (Acid Soluble)	M	2430	%	0.01	0.034
Arsenic	M	2450	mg/kg	1	14
Cadmium	M	2450	mg/kg	0.1	0.31
Chromium	M	2450	mg/kg	1	16
Copper	M	2450	mg/kg	0.5	12
Mercury	M	2450	mg/kg	0.1	< 0.10
Nickel	M	2450	mg/kg	0.5	15
Lead	M	2450	mg/kg	0.5	36
Selenium	M	2450	mg/kg	0.2	< 0.20
Zinc	M	2450	mg/kg	0.5	66
Chromium (Hexavalent)	N	2490	mg/kg	0.5	< 0.50
Naphthalene	M	2800	mg/kg	0.1	< 0.10
Acenaphthylene	N	2800	mg/kg	0.1	< 0.10
Acenaphthene	M	2800	mg/kg	0.1	< 0.10
Fluorene	M	2800	mg/kg	0.1	< 0.10
Phenanthrene	M	2800	mg/kg	0.1	0.16
Anthracene	M	2800	mg/kg	0.1	< 0.10
Fluoranthene	M	2800	mg/kg	0.1	0.37
Pyrene	M	2800	mg/kg	0.1	0.51
Benzo[a]anthracene	M	2800	mg/kg	0.1	< 0.10
Chrysene	M	2800	mg/kg	0.1	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.1	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.1	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.1	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.1	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.1	< 0.10

Results Summary - Soil

Project: 38506/CAT/MM - Blythe Street Wombwell Add GI

Client: Eastwood & Partners	Chemtest Job No.:		15-19717	
Quotation No.:	Chemtest Sample ID.:		183898	
Order No.:	Client Sample Ref.:		TP11	
	Client Sample ID.:			
	Sample Type:		SOIL	
	Top Depth (m):		0.50	
	Bottom Depth(m):			
	Date Sampled:		20-Aug-15	
Determinand	Accred.	SOP	Units	LOD
Benzo[g,h,i]perylene	M	2800	mg/kg	0.1
Total Of 16 PAH's	N	2800	mg/kg	2

Report Information

Key

- U UKAS accredited
- M MCERTS and UKAS accredited
- N Unaccredited
- S This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
- SN This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
- T This analysis has been subcontracted to an unaccredited laboratory
- I/S Insufficient Sample
- U/S Unsuitable Sample
- N/E not evaluated
- < "less than"
- > "greater than"

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVCOs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at our Coventry laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container

Sample Retention and Disposal

All soil samples will be retained for a period of 60 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.co.uk

Inorganic Compounds	Human Health - Residential with Homegrown Produce (mg/kg)
Arsenic	37
Cadmium	11
Chromium (III)	910
Chromium (VI)	6
Lead	200
Mercury	1.2
Nickel	180
Selenium	250
Copper	2400
Zinc	3700

Organic Compounds	Human Health - Residential with Homegrown Produce (mg/kg)		
	1% SOM	2.5% SOM	6% SOM
Naphthalene	2.3	5.6	13
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Fluorene	170	400	860
Phenanthrene	95	220	440
Anthracene	2400	5400	11000
Fluoranthene	280	560	890
Pyrene	620	1200	2000
Benzo(a)anthracene	7.2	11	13
Chrysene	15	22	27
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(k)fluoranthene	77	93	10
Benzo(a)pyrene	5.0	5.0	5.0
Dibenz(a,h)anthracene	0.24	0.28	0.3
Indeno(1,2,3-cd)pyrene	27	36	41
Benzo(g,h,i)perylene	320	340	350
Benzene	0.087	0.17	0.37
Toluene	130	290	660
Ethylbenzene	47	110	260
o-Xylene	60	140	330
m-Xylene	59	140	320
p-Xylene	56	130	310

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Prepared	KDL	Checked	CAT	Date	06/07/15	Job No	38506
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 Eastwood & Partners CONSULTING ENGINEERS St Andrew's House 23 Kingfield Road Sheffield S11 9AS Tel: (0114) 255 4554 Fax: (0114) 255 4330	GLEESON DEVELOPMENTS LTD BLYTHE STREET, WOMBWELL ASSESSMENT CRITERIA – RESIDENTIAL WITH HOMEGROWN PRODUCE
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Contaminant	Phytotoxicity			
	pH	pH	pH	pH
	5.0 to 5.5	5.5 to 6.0	6.0 to 6.5	>7.0
Arsenic	50			
Cadmium	3			
Chromium	400			
Lead	300			
Mercury	1			
Nickel	50	60	75	110
Copper	80	100	135	200
Zinc	200	200	200	300

The assessment concentration for lead and benzo(a)pyrene are the Category 4 Screening Levels produced by Contaminated Land: Applications in Real Environments (CL:AIRE) and outlined in Appendix H and E, respectively, of their report SP1010. The others have been taken from Nathanail, C. P., McCaffrey, C., Gillett, A., Ogden, R., and Nathanail, J., 2015, *'The LQM/CIEH S4ULs for Human Health Risk Assessment'*, Land Quality Press, Nottingham. The metals/metalloids are based on a sandy loam soil and 6% soil organic matter. The assessment values are not intended to be applied to individual sample results where materials are similar, as the levels of contaminants will have a natural variability across the site. Instead, the modified mean value should be compared with the assessment concentration.

The assessment values for phytotoxicity are the levels at which plant growth is thought to be affected. They are taken from the maximum permissible and advisable concentrations in soil after application of soil sludge given in the *'The Code of Good Agricultural Practice for the Protection of Soil'*, MAFF, 1998.

The assessment of sulphate, water soluble sulphate, elemental sulphur and sulphide is to determine the aggressive nature of the ground with respect to concrete and consequently the results are compared with BRE Special Digest 1:2005 *'Concrete in Aggressive Ground'*.

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Prepared	KDL	Checked	CAT	Date	06/07/15	Job No	38506
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 Eastwood & Partners CONSULTING ENGINEERS St Andrew's House 23 Kingfield Road Sheffield S11 9AS Tel: (0114) 255 4554 Fax: (0114) 255 4330	GLEESON DEVELOPMENTS LTD BLYTHE STREET, WOMBWELL ASSESSMENT CRITERIA – RESIDENTIAL WITH HOMEGROWN PRODUCE
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PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Benzo(b)Flouranthene in Topsoil	Prepared CAT	Checked MM

Sample results

5.1
0.79
0.76
0.74
1.00
1.80
1.60
0.74

Log x = y

0.708
-0.102
-0.119
-0.131
0.000
0.255
0.204
-0.131

Number of results : n = 8
Mean : X = 1.57
Standard deviation : s = 1.49
T value : t = 1.895

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 2.56

Max value = 5.10

log xm = ym = 0.708

Number of results : N = 8
Mean y = 0.085

Standard deviation of y 0.295

T = (ym-ya) / S = 2.111

Tcrit (fom table A1.3) = 1.91

Result probably an outlier

end

#REF!

PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Benzo(a)pyrene in Topsoil	Prepared CAT	Checked MM

Sample results

6.4
0.51
0.50
0.40
0.69
1.40
1.10
0.49

Log x = y

0.806
-0.292
-0.301
-0.398
-0.161
0.146
0.041
-0.310

Number of results : n = 8
Mean : X = 1.44
Standard deviation : s = 2.04
T value : t = 1.895

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 2.80

Max value = 6.40

log xm = ym = 0.806

Number of results : N = 8
Mean y = -0.059

Standard deviation of y 0.397

T = (ym-ya) / S = 2.180

Tcrit (fom table A1.3) = 1.91

Result probably an outlier

end

#REF!

PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Dibenzo(a,h)anthracene in Topsoil	Prepared CAT	Checked MM

Sample results

Log x = y

0.4

-0.398

Number of results : n = 8

0.10

-1.000

Mean : X = 0.14

0.10

-1.000

Standard deviation : s = 0.11

0.10

-1.000

T value : t = 1.895

0.10

-1.000

0.10

-1.000

0.10

-1.000

0.10

-1.000

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 0.21

Max value = 0.40

log xm = ym = -0.398

Number of results : N = 8

Mean y = -0.925

Standard deviation of y 0.213

T = (ym-ya) / S = 2.475

Tcrit (fom table A1.3) = 1.91

Result probably an outlier

end

#REF!

PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Benzo(b)Fluoranthene in Made Ground	Prepared MM	Checked LED

Sample results

	Log x = y
0.31	-0.509
4.80	0.681
0.24	-0.620
5.10	0.708
0.10	-1.000
0.10	-1.000
0.26	-0.585
0.71	-0.149
2.60	0.415
2.50	0.398
3.20	0.505
8.10	0.908
1.40	0.146
1.30	0.114
12.00	1.079
0.91	-0.041
0.10	-1.000

Number of results : n = 17
Mean : X = 2.57
Standard deviation : s = 3.30
T value : t = 1.746

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 3.97

Max value = 12.00

log xm = ym = 1.079

Number of results : N = 17
Mean y = 0.003

Standard deviation of y 0.688

T = (ym-ya) / S = 1.563

Tcrit (fom table A1.3) = 2.305

Result probably not an outlier

end

#REF!

PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Benzo(a)pyrene in Made Ground	Prepared MM	Checked LED

Sample results

	Log x = y
0.30	-0.523
5.10	0.708
0.20	-0.699
6.20	0.792
0.10	-1.000
0.10	-1.000
0.19	-0.721
0.48	-0.319
2.10	0.322
2.00	0.301
2.60	0.415
6.70	0.826
1.10	0.041
0.97	-0.013
10.00	1.000
0.62	-0.208
0.10	-1.000

Number of results : n = 17
Mean : X = 2.29
Standard deviation : s = 2.94
T value : t = 1.746

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 3.53

Max value = 10.00

log xm = ym = 1.000

Number of results : N = 17
Mean y = -0.063

Standard deviation of y 0.686

T = (ym-ya) / S = 1.549

Tcrit (fom table A1.3) = 2.305

Result probably not an outlier

end

#REF!

PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Dibenz(a,h)anthracene in Made Ground	Prepared MM	Checked LED

Sample results

	Log x = y
0.10	-1.000
0.41	-0.387
0.10	-1.000
0.39	-0.409
0.10	-1.000
0.10	-1.000
0.10	-1.000
0.10	-1.000
0.14	-0.854
0.14	-0.854
0.25	-0.602
0.92	-0.036
0.10	-1.000
0.10	-1.000
1.30	0.114
0.10	-1.000
0.10	-1.000

Number of results : n = 17
Mean : X = 0.27
Standard deviation : s = 0.34
T value : t = 1.746

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 0.41

Max value = 1.30

log xm = ym = 0.114

Number of results : N = 17
Mean y = -0.766

Standard deviation of y 0.368

T = (ym-ya) / S = 2.392

Tcrit (fom table A1.3) = 2.305

Result probably an outlier

end

#REF!

PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Benzo(a)anthracene in Made Ground	Prepared MM	Checked LED

Sample results

	Log x = y
0.28	-0.553
3.70	0.568
0.22	-0.658
5.30	0.724
0.10	-1.000
0.10	-1.000
0.20	-0.699
0.78	-0.108
2.50	0.398
2.20	0.342
2.70	0.431
5.90	0.771
1.20	0.079
1.10	0.041
9.80	0.991
0.63	-0.201
0.10	-1.000

Number of results : n = 17
Mean : X = 2.17
Standard deviation : s = 2.68
T value : t = 1.746

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 3.30

Max value = 9.80

log xm = ym = 0.991

Number of results : N = 17
Mean y = -0.051

Standard deviation of y 0.667

T = (ym-ya) / S = 1.562

Tcrit (fom table A1.3) = 2.305

Result probably not an outlier

end

#REF!

PROJECT: Blythe Street, Wombwell	Job No. 38506	Date 29.09.15
SUBJECT: Mean and Maximum Value Test for Copper in Made Ground	Prepared MM	Checked LED

Sample results

Log x = y

30.0	1.477	Number of results : n = 14
260.00	2.415	Mean : X = 105.50
12.00	1.079	Standard deviation : s = 175.51
15.00	1.176	T value : t = 1.771
13.00	1.114	
20.00	1.301	
22.00	1.342	
14.00	1.146	
460.00	2.663	
16.00	1.204	
54.00	1.732	
520.00	2.716	
29.00	1.462	
12.00	1.079	

Corrected mean (95% confidence)

= X + t * s / n^0.5 = 188.57

Max value = 520.00

log xm = ym = 2.716

Number of results : N = 14

Mean y = 1.565

Standard deviation of y 0.592

T = (ym-ya) / S = 1.946

Tcrit (fom table A1.3) = 2.21

Result probably not an outlier

end

#REF!