

Our Ref: YE9052

28th September 2020

For the attention of Mr Strong, C/O Bucks Recycling

**Ref: Bucks Recycling, Building 214 Westcott Venture Park, Aylesbury,
Buckinghamshire, HP18 0XB**

We thank you for your request to undertake permeability testing at the above mentioned site and take pleasure in enclosing the results of this work. The investigation was undertaken on the 25th September 2020 in accordance with your instruction to proceed. This letter describes the work undertaken, presents the data obtained and discusses the results of the tests.

Geology

An examination of the available British Geological Survey data of the area for the site has been examined and indicates that the site has no superficial drift deposits recorded, and bedrock deposits recorded as the West Walton Formation (mudstone).

Fieldworks

The programme of this investigation included the excavation of four trial pits. The locations of the soakaway tests were selected by the client. A further deeper excavation was carried out to a depth of 8.0-10.0mbgl to check for a change in geology. Upon excavation the geology remained the same with some coarse particles of mudstone present.

During this work, the soils encountered were logged in general accordance with BS 5930: 1990, as amended in 2007, and full descriptions are given on the borehole records, which are also appended to this letter.

Soakaway Tests

During the soakaway tests the water failed to achieve a fall from 75% to 25% of the effective depth of the storage volume in all four trial pits. The results obtained from the soakaway tests are summarised below:

Table 1: Soakaway Test Results

WS	Soakage Area Dimensions (m)	Depth (m)	Soil Description (Base of TP)	Infiltration Rate (m/sec)	Drainage Characteristics
TP01 test1	1.20 x 0.30	1.50	Light brown and mottled grey CLAY.	N/A	Practically Impermeable
TP02 test1	1.20 x 0.30	1.75	Grey and mottled orange CLAY.	N/A	Practically Impermeable
TP03 test1	1.30 x 0.30	1.50	Light brown sandy CLAY. Sand is medium - coarse.	N/A	Practically Impermeable

TP04 test1	1.40 x 0.30	1.80	Grey and mottled orange CLAY.	N/A	Practically Impermeable
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Discussion

The soils encountered beneath the site were recorded as predominantly CLAY. The soakage rates obtained during the investigation were found to be poor to practically impermeable. Given the data from the test, it is considered that the use of soakaways is not suitable for this site.

References

Building Research Establishment (BRE) Digest 365, *Soakaway Design*, September 1991.

British Standards Institution (1999) BS5930: *Code of practice for site investigations*, B.S.I., London.

British Standards Institution (2007), Amendment No 1, BS5930: *Code of practice for site investigations*, B.S.I., London.

We trust that this information is of interest and should you have any other requirements do not hesitate to contact us.

For and on behalf of

Your Environment

Yours Faithfully,



Nick Hammond

Geo-Environmental Engineer

Enc.

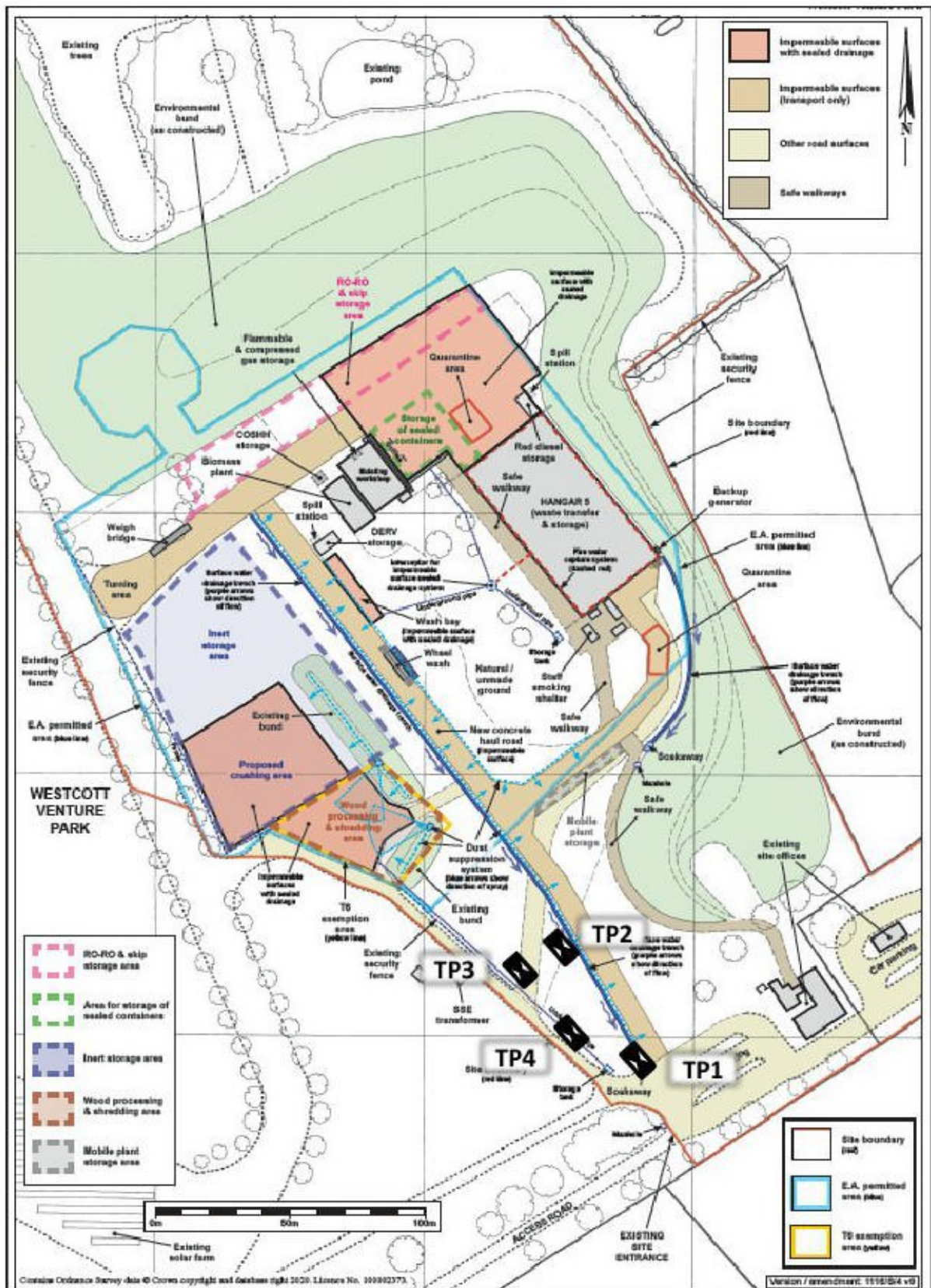
Appendix A: Site Investigation Plan

Appendix B: Trial Pit Logs

Appendix C: Soakaway Test Results

APPENDIX A: Site Investigation Plan





Title: **Investigation Location Plan**



Site Name:
Bucks Recycling, Westcott Venture Pak

Job No:
YE9052

APPENDIX B: Trial Pit Logs



Trial Pit Log

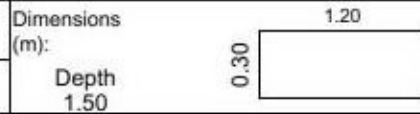
Project Name: Hanger 5, Wescott Venture Park

Project No.
YE9052

Co-ords: -
Level:

Date
25/09/2020





Location: Aylesbury, HP18 0XB



Scale
1:25

Client: Bucks Recycling Ltd

Logged
NH

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
							Brown clayey SAND. Sand is medium to coarse.
				0.45			Light brown sandy CLAY. Sand is medium to coarse.
				0.70			Light brown sandy, gravelly CLAY. Sand is medium to coarse. Gravel is medium to coarse, angular of flint and chalk fragments.
				0.90			Light brown and mottled grey CLAY.
				1.50			End of Pit at 1.50m

Remarks:

Stability:



Trial Pit Log

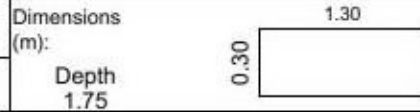
Project Name: Hanger 5, Wescott Venture Park

Project No.
YE9052

Co-ords: -
Level:

Date
25/09/2020





Location: Aylesbury, HP18 0XB



Scale
1:25

Client: Bucks Recycling Ltd

Logged
NH

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.15			Brown clayey SAND. Sand is medium to coarse.
							Brown and mottled light brown sandy CLAY. Sand is medium to coarse.
				0.80			Brown gravelly CLAY. Gravel is medium to coarse, angular of flint and chalk fragments.
				1.10			Grey and mottled orange CLAY.
				1.75			End of Pit at 1.75m

Remarks:

Stability:



Trial Pit Log

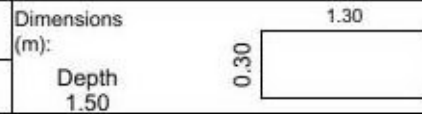
Project Name: Hanger 5, Wescott Venture Park

Project No.
YE9052

Co-ords: -
Level:

Date
25/09/2020




Location: Aylesbury, HP18 0XB



Scale
1:25

Logged
NH

Client: Bucks Recycling Ltd

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10			Brown clayey SAND. Sand is medium to coarse.
							Brown CLAY.
				0.75			Light brown sandy CLAY. Sand is medium to coarse.
				1.50			End of Pit at 1.50m

Remarks:

Stability:



Trial Pit Log

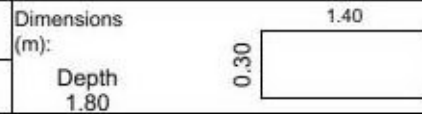
Project Name: Hanger 5, Wescott Venture Park

Project No.
YE9052

Co-ords: -
Level:

Date
25/09/2020




Location: Aylesbury, HP18 0XB



Scale
1:25

Logged
NH

Client: Bucks Recycling Ltd

Water Strike	Samples & In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
	Depth	Type	Results				
				0.10			Brown clayey SAND. Sand is medium to coarse.
							Light brown CLAY.
				1.00			Grey and mottled orange CLAY.
				1.80			End of Pit at 1.80m

Remarks:

Stability:

APPENDIX B: Soakaway Test Results

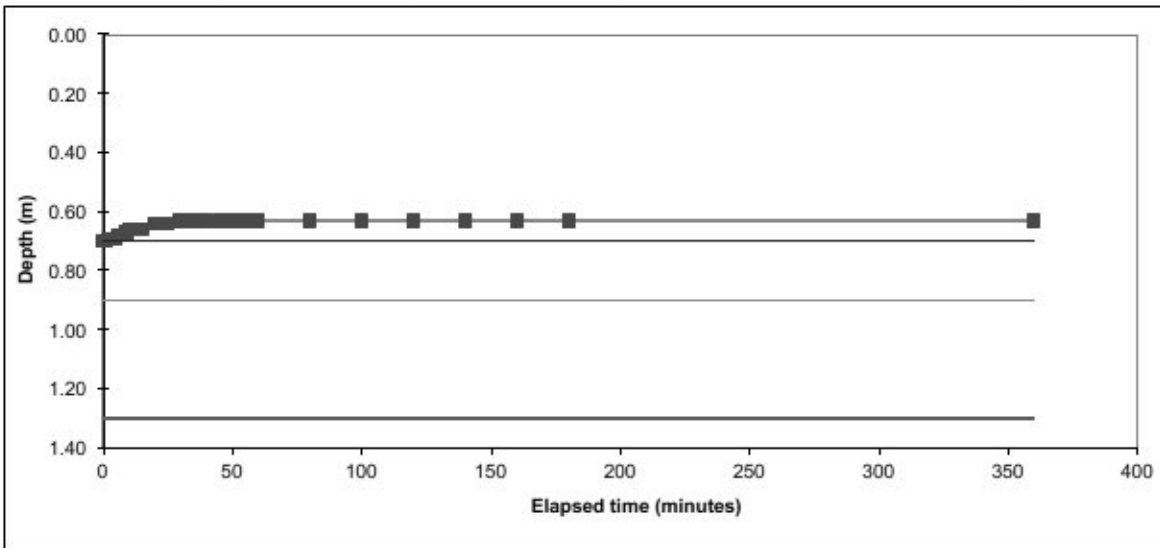


Your Environment

Soakaway Test

Trial Pit No:	TP1	Test No:	1	Date:	25/09/2020
Length (m):	1.200	Datum Height:		0.00 m agl	
Width (m):	0.30	Granular infill:	None		
Depth (m):	1.50	Porosity of infill:	1	(assumed)	

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	0.700	30	0.630
1	0.700	35	0.630
2	0.690	40	0.630
3	0.690	45	0.630
4	0.690	50	0.630
5	0.690	55	0.630
6	0.680	60	0.630
7	0.680	80	0.630
8	0.680	100	0.630
9	0.670	120	0.630
10	0.660	140	0.630
15	0.660	160	0.630
20	0.640	180	0.630
25	0.640		



Start water depth for analysis (mbgl)	0.70	Elapsed time (mins):	#N/A
75% effective depth (mbgl):	0.90		
50% effective depth (mbgl):	1.10	Elapsed time (mins):	#N/A
25% effective depth (mbgl):	1.30		
Base of soakage zone (mbgl):	1.50		

Volume outflow between 75% and 25% effective depth (m³):
 Mean surface area of outflow (m²): 1.56
 (side area at 50% effective depth + base area)
 Time for outflow between 75% and 25% effective depth (mins):

Soil infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
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Remarks: Results processed following BRE 365 (2007).

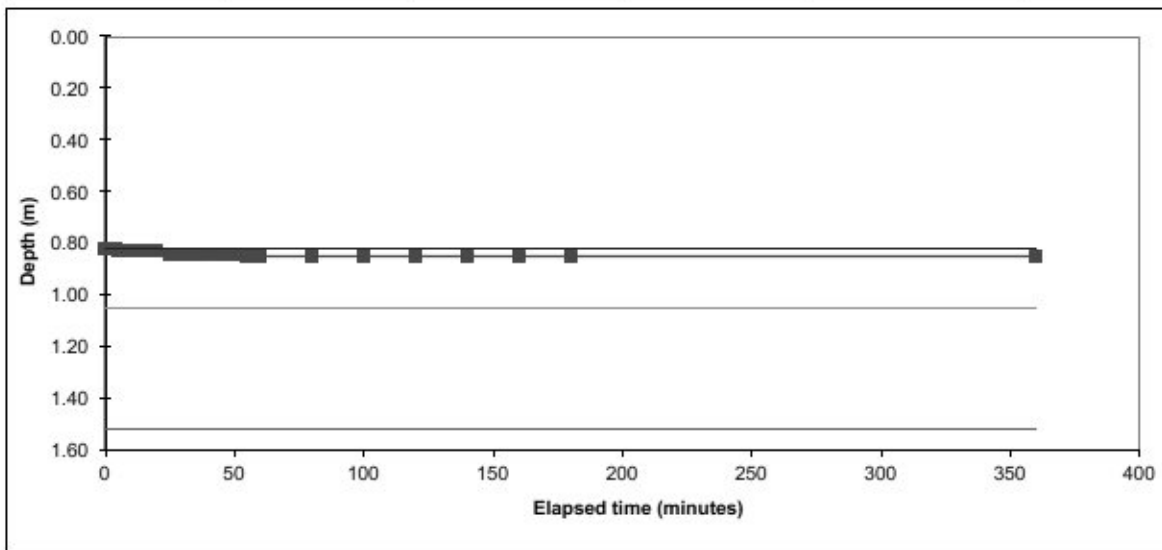
Client:	Bucks Recycling	TP1
Site:	Bucks Recycling, Westcott Venture Park	

Your Environment

Soakaway Test

Trial Pit No:	TP2	Test No:	1	Date:	25/09/2020
Length (m):	1.300	Datum Height:		0.00 m agl	
Width (m):	0.30	Granular infill:	None		
Depth (m):	1.75	Porosity of infill:	1	(assumed)	

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	0.820	30	0.840
1	0.820	35	0.840
2	0.820	40	0.840
3	0.820	45	0.840
4	0.820	50	0.840
5	0.830	55	0.850
6	0.830	60	0.850
7	0.830	80	0.850
8	0.830	100	0.850
9	0.830	120	0.850
10	0.830	140	0.850
15	0.830	160	0.850
20	0.830	180	0.850
25	0.840		



Start water depth for analysis (mbgl)	0.82	Elapsed time (mins):	#N/A
75% effective depth (mbgl):	1.05		
50% effective depth (mbgl):	1.29		
25% effective depth (mbgl):	1.52	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.75		
Volume outflow between 75% and 25% effective depth (m ³):			
Mean surface area of outflow (m ²):			1.86
(side area at 50% effective depth + base area)			
Time for outflow between 75% and 25% effective depth (mins):			

Soil infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
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Remarks: Results processed following BRE 365 (2007).

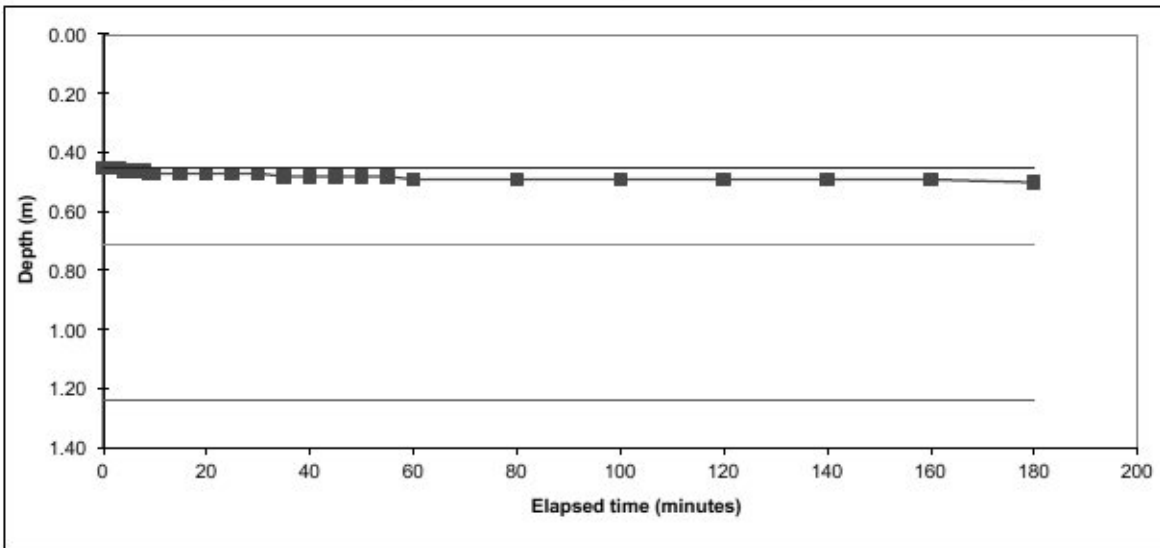
Client:	Bucks Recycling	TP2
Site:	Bucks Recycling, Westcott Venture Park	

Your Environment

Soakaway Test

Trial Pit No:	TP3	Test No:	1	Date:	25/09/2020
Length (m):	1.300	Datum Height:		0.00 m agl	
Width (m):	0.30	Granular infill:	None		
Depth (m):	1.50	Porosity of infill:	1	(assumed)	

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	0.450	30	0.470
1	0.450	35	0.480
2	0.450	40	0.480
3	0.450	45	0.480
4	0.460	50	0.480
5	0.460	55	0.480
6	0.460	60	0.490
7	0.460	80	0.490
8	0.460	100	0.490
9	0.470	120	0.490
10	0.470	140	0.490
15	0.470	160	0.490
20	0.470	180	0.500
25	0.470		



Start water depth for analysis (mbgl)	0.45	Elapsed time (mins):	#N/A
75% effective depth (mbgl):	0.71		
50% effective depth (mbgl):	0.98		
25% effective depth (mbgl):	1.24	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.50		
Volume outflow between 75% and 25% effective depth (m ³):			
Mean surface area of outflow (m ²):			2.05
(side area at 50% effective depth + base area)			
Time for outflow between 75% and 25% effective depth (mins):			

Soil infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
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Remarks: Results processed following BRE 365 (2007).

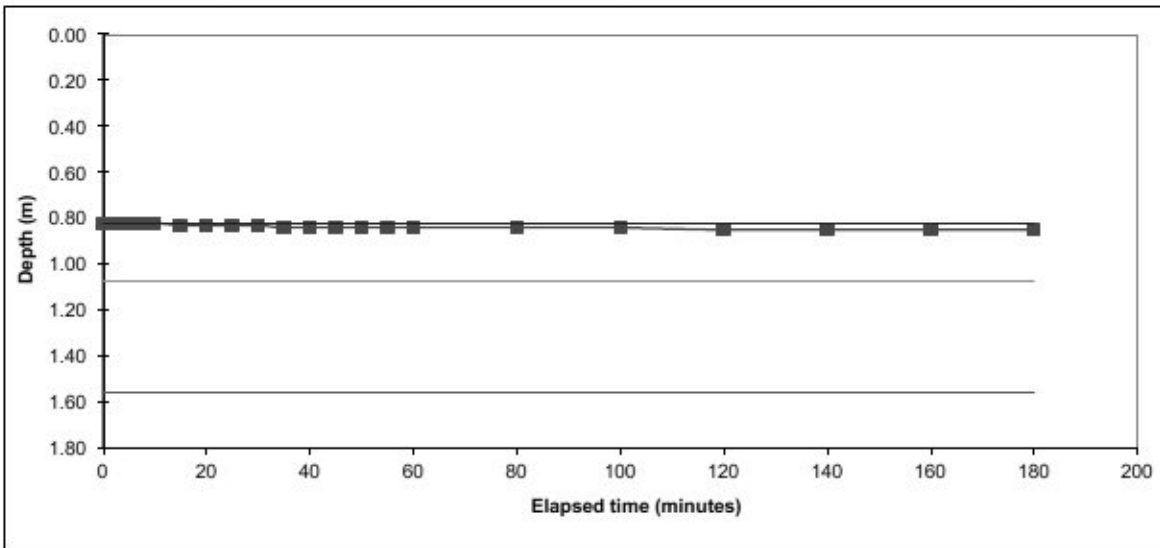
Client:	Bucks Recycling	TP3
Site:	Bucks Recycling, Westcott Venture Park	

Your Environment

Soakaway Test

Trial Pit No:	TP4	Test No:	1	Date:	25/09/2020
Length (m):	1.400	Datum Height:		0.00 m agl	
Width (m):	0.30	Granular infill:	None		
Depth (m):	1.80	Porosity of infill:	1	(assumed)	

Elapsed time (minutes)	Water Depth (m below datum)	Elapsed time (minutes)	Water Depth (m below datum)
0	0.820	30	0.830
1	0.820	35	0.840
2	0.820	40	0.840
3	0.820	45	0.840
4	0.820	50	0.840
5	0.820	55	0.840
6	0.820	60	0.840
7	0.820	80	0.840
8	0.820	100	0.840
9	0.820	120	0.850
10	0.820	140	0.850
15	0.830	160	0.850
20	0.830	180	0.850
25	0.830		



Start water depth for analysis (mbgl)	0.82	Elapsed time (mins):	#N/A
75% effective depth (mbgl):	1.07	Elapsed time (mins):	#N/A
50% effective depth (mbgl):	1.31	Elapsed time (mins):	#N/A
25% effective depth (mbgl):	1.56	Elapsed time (mins):	#N/A
Base of soakage zone (mbgl):	1.80		

Volume outflow between 75% and 25% effective depth (m³):
 Mean surface area of outflow (m²): 2.09
 (side area at 50% effective depth + base area)
 Time for outflow between 75% and 25% effective depth (mins):

Soil infiltration rate (m/s):	Test incomplete as 25% effective depth not achieved. Unable to reliably determine soil infiltration rate.
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Remarks: Results processed following BRE 365 (2007).

Client:	Bucks Recycling	TP4
Site:	Bucks Recycling, Westcott Venture Park	