



CLIENT WSP GROUP  
 SITE Whitfield  
 DATE 11/02/2016

TRIAL PIT **IN101**

<p><b>TEST 1</b></p> <p>LENGTH 2.80 m                      BREADTH 0.70 m                      DEPTH 2.50 m                      WATER LEVEL Dry                      FILL LEVEL 1.23 m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> ms<sup>-1</sup>                      Insufficient take to calculate infiltration rate.</p>		
<p><b>TEST 2</b></p> <p>LENGTH m                      BREADTH m                      DEPTH m                      WATER LEVEL m                      FILL LEVEL m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> * x 10<sup>*</sup> ms<sup>-1</sup></p>		
<p><b>TEST 3</b></p> <p>LENGTH m                      BREADTH m                      DEPTH m                      WATER LEVEL m                      FILL LEVEL m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> * x 10<sup>*</sup> ms<sup>-1</sup></p>		
<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).                      Test abandoned due to insufficient take.</p>	<p>CONTRACT  <b>31634</b></p>	<p>CHECKED</p>

06/960



CLIENT WSP GROUP  
 SITE Whitfield  
 DATE 11/02/2016

TRIAL PIT **IN102**

<p><b>TEST 1</b></p> <p>LENGTH 2.80 m                  BREADTH 0.70 m                  DEPTH 3.00 m                  WATER LEVEL Dry                  FILL LEVEL 2.05 m</p> <p><math>V_{p75-25}</math> 0.93 m<sup>3</sup>  <math>a_{p50}</math> 5.29 m<sup>2</sup>  <math>t_{p75-25}</math> 14 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>2.1 \times 10^{-4}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Data for Test 1 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>2.10</td></tr> <tr><td>2</td><td>2.15</td></tr> <tr><td>5</td><td>2.30</td></tr> <tr><td>10</td><td>2.60</td></tr> <tr><td>20</td><td>2.80</td></tr> <tr><td>30</td><td>2.90</td></tr> <tr><td>40</td><td>2.95</td></tr> <tr><td>50</td><td>3.00</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	2.10	2	2.15	5	2.30	10	2.60	20	2.80	30	2.90	40	2.95	50	3.00		
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<p><b>TEST 3</b></p> <p>LENGTH 2.80 m                  BREADTH 0.70 m                  DEPTH 3.00 m                  WATER LEVEL Dry m                  FILL LEVEL 2.05 m</p> <p><math>V_{p75-25}</math> 0.93 m<sup>3</sup>  <math>a_{p50}</math> 5.29 m<sup>2</sup>  <math>t_{p75-25}</math> 28 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>1.0 \times 10^{-4}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Data for Test 3 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>2.10</td></tr> <tr><td>2</td><td>2.15</td></tr> <tr><td>5</td><td>2.30</td></tr> <tr><td>10</td><td>2.50</td></tr> <tr><td>15</td><td>2.60</td></tr> <tr><td>20</td><td>2.70</td></tr> <tr><td>40</td><td>2.85</td></tr> <tr><td>60</td><td>2.95</td></tr> <tr><td>75</td><td>3.05</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	2.10	2	2.15	5	2.30	10	2.50	15	2.60	20	2.70	40	2.85	60	2.95	75	3.05
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<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).</p>	<p>CONTRACT  <b>31634</b></p>	<p>CHECKED  <b>CT</b></p>
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06/960



CLIENT WSP GROUP  
 SITE Whitfield  
 DATE 11/02/2016

TRIAL PIT **IN103**

<p><b>TEST 1</b></p> <p>LENGTH 2.75 m                      BREADTH 0.70 m                      DEPTH 2.90 m                      WATER LEVEL Dry                      FILL LEVEL 1.85 m</p> <p><math>V_{p75-25}</math> 1.01 m<sup>3</sup>  <math>a_{p50}</math> 5.55 m<sup>2</sup>  <math>t_{p75-25}</math> 25 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>1.2 \times 10^{-4}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Approximate data for Test 1 graph</caption> <thead> <tr> <th>Time (min)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.85</td></tr> <tr><td>2</td><td>1.95</td></tr> <tr><td>5</td><td>2.10</td></tr> <tr><td>10</td><td>2.20</td></tr> <tr><td>20</td><td>2.45</td></tr> <tr><td>30</td><td>2.65</td></tr> <tr><td>40</td><td>2.80</td></tr> <tr><td>45</td><td>2.90</td></tr> </tbody> </table>	Time (min)	Depth to water (m)	0	1.85	2	1.95	5	2.10	10	2.20	20	2.45	30	2.65	40	2.80	45	2.90		
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<p><b>TEST 2</b></p> <p>LENGTH 2.75 m                      BREADTH 0.70 m                      DEPTH 2.90 m                      WATER LEVEL Dry m                      FILL LEVEL 1.85 m</p> <p><math>V_{p75-25}</math> 1.01 m<sup>3</sup>  <math>a_{p50}</math> 5.55 m<sup>2</sup>  <math>t_{p75-25}</math> 18 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>1.7 \times 10^{-4}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Approximate data for Test 2 graph</caption> <thead> <tr> <th>Time (min)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.85</td></tr> <tr><td>2</td><td>1.95</td></tr> <tr><td>5</td><td>2.05</td></tr> <tr><td>10</td><td>2.15</td></tr> <tr><td>15</td><td>2.35</td></tr> <tr><td>20</td><td>2.50</td></tr> <tr><td>30</td><td>2.75</td></tr> <tr><td>40</td><td>2.90</td></tr> </tbody> </table>	Time (min)	Depth to water (m)	0	1.85	2	1.95	5	2.05	10	2.15	15	2.35	20	2.50	30	2.75	40	2.90		
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<p><b>TEST 3</b></p> <p>LENGTH 2.75 m                      BREADTH 0.70 m                      DEPTH 2.90 m                      WATER LEVEL Dry m                      FILL LEVEL 1.85 m</p> <p><math>V_{p75-25}</math> 1.010 m<sup>3</sup>  <math>a_{p50}</math> 5.550 m<sup>2</sup>  <math>t_{p75-25}</math> 23 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>1.3 \times 10^{-4}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Approximate data for Test 3 graph</caption> <thead> <tr> <th>Time (min)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.85</td></tr> <tr><td>2</td><td>1.95</td></tr> <tr><td>5</td><td>2.05</td></tr> <tr><td>10</td><td>2.25</td></tr> <tr><td>15</td><td>2.35</td></tr> <tr><td>20</td><td>2.45</td></tr> <tr><td>30</td><td>2.65</td></tr> <tr><td>40</td><td>2.80</td></tr> <tr><td>45</td><td>2.90</td></tr> </tbody> </table>	Time (min)	Depth to water (m)	0	1.85	2	1.95	5	2.05	10	2.25	15	2.35	20	2.45	30	2.65	40	2.80	45	2.90
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<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).</p>		<p>CONTRACT  <b>31634</b></p>	<p>CHECKED  <b>CT</b></p>																		

06/960



CLIENT WSP GROUP  
 SITE Whitfield  
 DATE 11/02/2016

TRIAL PIT **IN104**

<p><b>TEST 1</b></p> <p>LENGTH 2.75 m                      BREADTH 0.70 m                      DEPTH 3.30 m                      WATER LEVEL Dry                      FILL LEVEL 2.20 m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> ms<sup>-1</sup>                      Insufficient take to calculate infiltration rate.</p>			
<p><b>TEST 2</b></p> <p>LENGTH m                      BREADTH m                      DEPTH m                      WATER LEVEL m                      FILL LEVEL m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> * x 10<sup>*</sup> ms<sup>-1</sup></p>			
<p><b>TEST 3</b></p> <p>LENGTH m                      BREADTH m                      DEPTH m                      WATER LEVEL m                      FILL LEVEL m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> * x 10<sup>*</sup> ms<sup>-1</sup></p>			
<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).</p>		<p>CONTRACT  <b>31634</b></p>	<p>CHECKED  <b>CT</b></p>

06/9/0



CLIENT WSP GROUP  
 SITE Whitfield  
 DATE 12/02/2016

TRIAL PIT **IN105**

<p><b>TEST 1</b></p> <p>LENGTH 2.75 m                      BREADTH 0.70 m                      DEPTH 3.00 m                      WATER LEVEL Dry                      FILL LEVEL 1.98 m</p> <p><math>V_{p75-25}</math> 0.98 m<sup>3</sup>  <math>a_{p50}</math> 5.44 m<sup>2</sup>  <math>t_{p75-25}</math> 37 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>8.1 \times 10^{-5}</math> ms<sup>-1</sup></p>			
<p><b>TEST 2</b></p> <p>LENGTH 2.75 m                      BREADTH 0.70 m                      DEPTH 3.00 m                      WATER LEVEL Dry m                      FILL LEVEL 1.93 m</p> <p><math>V_{p75-25}</math> 1.03 m<sup>3</sup>  <math>a_{p50}</math> 5.62 m<sup>2</sup>  <math>t_{p75-25}</math> 55 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>5.6 \times 10^{-5}</math> ms<sup>-1</sup></p>			
<p><b>TEST 3</b></p> <p>LENGTH 2.70 m                      BREADTH 0.70 m                      DEPTH 3.00 m                      WATER LEVEL Dry m                      FILL LEVEL 1.95 m</p> <p><math>V_{p75-25}</math> 0.99 m<sup>3</sup>  <math>a_{p50}</math> 5.46 m<sup>2</sup>  <math>t_{p75-25}</math> 78 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>3.9 \times 10^{-5}</math> ms<sup>-1</sup></p>			
<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).</p>		<p>CONTRACT  <b>31634</b></p>	<p>CHECKED  <b>CT</b></p>

06/960



CLIENT WSP GROUP  
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TRIAL PIT **IN106**

<p><b>TEST 1</b></p> <p>LENGTH 2.70 m                  BREADTH 0.70 m                  DEPTH 2.50 m                  WATER LEVEL Dry                  FILL LEVEL 1.30 m</p> <p><math>V_{p75-25}</math> 1.13 m<sup>3</sup>  <math>a_{p50}</math> 5.97 m<sup>2</sup>  <math>t_{p75-25}</math> 29 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>1.1 \times 10^{-4}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Data for Test 1 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.30</td></tr> <tr><td>2</td><td>1.35</td></tr> <tr><td>5</td><td>1.50</td></tr> <tr><td>10</td><td>1.80</td></tr> <tr><td>25</td><td>1.95</td></tr> <tr><td>40</td><td>2.10</td></tr> <tr><td>55</td><td>2.45</td></tr> <tr><td>60</td><td>2.50</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	1.30	2	1.35	5	1.50	10	1.80	25	1.95	40	2.10	55	2.45	60	2.50				
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<p><b>TEST 2</b></p> <p>LENGTH 2.70 m                  BREADTH 0.70 m                  DEPTH 2.50 m                  WATER LEVEL Dry m                  FILL LEVEL 1.40 m</p> <p><math>V_{p75-25}</math> 1.04 m<sup>3</sup>  <math>a_{p50}</math> 5.63 m<sup>2</sup>  <math>t_{p75-25}</math> 37 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>8.1 \times 10^{-5}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Data for Test 2 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.40</td></tr> <tr><td>2</td><td>1.55</td></tr> <tr><td>5</td><td>1.65</td></tr> <tr><td>10</td><td>1.80</td></tr> <tr><td>20</td><td>1.95</td></tr> <tr><td>30</td><td>2.05</td></tr> <tr><td>45</td><td>2.20</td></tr> <tr><td>65</td><td>2.40</td></tr> <tr><td>80</td><td>2.50</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	1.40	2	1.55	5	1.65	10	1.80	20	1.95	30	2.05	45	2.20	65	2.40	80	2.50		
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<p><b>TEST 3</b></p> <p>LENGTH 2.70 m                  BREADTH 0.70 m                  DEPTH 2.50 m                  WATER LEVEL Dry m                  FILL LEVEL 1.40 m</p> <p><math>V_{p75-25}</math> 1.04 m<sup>3</sup>  <math>a_{p50}</math> 5.63 m<sup>2</sup>  <math>t_{p75-25}</math> 44 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>7.0 \times 10^{-5}</math> ms<sup>-1</sup></p>	<table border="1"> <caption>Data for Test 3 Graph</caption> <thead> <tr> <th>Time (minutes)</th> <th>Depth to water (m)</th> </tr> </thead> <tbody> <tr><td>0</td><td>1.40</td></tr> <tr><td>2</td><td>1.50</td></tr> <tr><td>5</td><td>1.60</td></tr> <tr><td>10</td><td>1.75</td></tr> <tr><td>15</td><td>1.85</td></tr> <tr><td>25</td><td>1.95</td></tr> <tr><td>45</td><td>2.10</td></tr> <tr><td>60</td><td>2.30</td></tr> <tr><td>75</td><td>2.40</td></tr> <tr><td>85</td><td>2.50</td></tr> </tbody> </table>	Time (minutes)	Depth to water (m)	0	1.40	2	1.50	5	1.60	10	1.75	15	1.85	25	1.95	45	2.10	60	2.30	75	2.40	85	2.50
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<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).</p>	<p>CONTRACT  <b>31634</b></p>	<p>CHECKED  <b>CT</b></p>
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06/960



CLIENT WSP GROUP  
 SITE Whitfield  
 DATE 08/02/2016

TRIAL PIT **IN108**

<p><b>TEST 1</b></p> <p>LENGTH 2.50 m                      BREADTH 0.70 m                      DEPTH 2.90 m                      WATER LEVEL Dry                      FILL LEVEL 1.90 m</p> <p><math>V_{p75-25}</math> 0.86 m<sup>3</sup>  <math>a_{p50}</math> 4.95 m<sup>2</sup>  <math>t_{p75-25}</math> 200 min</p> <p><b>soil infiltration rate, <math>f</math></b> <math>1.4 \times 10^{-5}</math> ms<sup>-1</sup>                      Calculated by extrapolating timeline</p>			
<p><b>TEST 2</b></p> <p>LENGTH m                      BREADTH m                      DEPTH m                      WATER LEVEL m                      FILL LEVEL m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> ms<sup>-1</sup></p>			
<p><b>TEST 3</b></p> <p>LENGTH m                      BREADTH m                      DEPTH m                      WATER LEVEL m                      FILL LEVEL m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> ms<sup>-1</sup></p>			
<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).                      Insufficient time for three fillings.</p>		<p>CONTRACT  <b>31634</b></p>	<p>CHECKED  <b>CT</b></p>

06/960



CLIENT WSP GROUP  
 SITE Whitfield  
 DATE 08/02/2016

TRIAL PIT **IN109**

<p><b>TEST 1</b></p> <p>LENGTH 2.60 m                      BREADTH 0.60 m                      DEPTH 2.90 m                      WATER LEVEL Dry                      FILL LEVEL 2.10 m</p> <p><math>V_{p75-25}</math> 0.62 m<sup>3</sup>  <math>a_{p50}</math> 4.12 m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> ms<sup>-1</sup>                      Insufficient take to calculate infiltration rate</p>			
<p><b>TEST 1</b></p> <p>LENGTH 2.60 m                      BREADTH 0.60 m                      DEPTH 2.90 m                      WATER LEVEL Dry m                      FILL LEVEL 2.10 m</p> <p><math>V_{p75-25}</math> 0.39 m<sup>3</sup>  <math>a_{p50}</math> 5.08 m<sup>2</sup>  <math>t_{p75-25}</math> 48 min</p> <p><b>soil infiltration rate, <math>f</math></b> 2.7x 10<sup>-5</sup> ms<sup>-1</sup>                      Calculated over depth range achieved for test.</p>			
<p><b>TEST 3</b></p> <p>LENGTH m                      BREADTH m                      DEPTH m                      WATER LEVEL m                      FILL LEVEL m</p> <p><math>V_{p75-25}</math> m<sup>3</sup>  <math>a_{p50}</math> m<sup>2</sup>  <math>t_{p75-25}</math> min</p> <p><b>soil infiltration rate, <math>f</math></b> * x 10<sup>*</sup> ms<sup>-1</sup></p>			
<p><b>Remarks</b> Test carried out in general accordance with BRE 365 (2007).                      Insufficient time for three fillings.</p>		<p>CONTRACT  <b>31634</b></p>	<p>CHECKED  <b>CT</b></p>

06/06



# Appendix H

**LABORATORY RESULTS**



WSP Environmental  
Unit 9, The Chase  
John Tate Road  
Foxholes Business Park  
Hertford  
SG13 7NN

**Attention:** Ella Niehorster

## CERTIFICATE OF ANALYSIS

**Date:** 22 February 2016  
**Customer:** H\_WSP\_HER  
**Sample Delivery Group (SDG):** 160216-25  
**Your Reference:** 70012378  
**Location:** Whitfield  
**Report No:** 350443

We received 136 samples on Tuesday February 16, 2016 and 37 of these samples were scheduled for analysis which was completed on Monday February 22, 2016. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

All chemical testing (unless subcontracted) is performed at ALcontrol Hawarden Laboratories.

Approved By:

**Sonia McWhan**

Operations Manager





**SDG:** 160216-25  
**Job:** H\_WSP\_HER-187  
**Client Reference:** 70012378

**Location:** Whitfield  
**Customer:** WSP Environmental  
**Attention:** Ella Niehorster

**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

## Received Sample Overview

Lab Sample No(s)	Customer Sample Ref.	AGS Ref.	Depth (m)	Sampled Date
12932472	BH01		0.00 - 3.00	
12932993	BH01	ES	0.30 - 0.40	11/02/2016
12932999	BH01	ES	0.50 - 0.70	11/02/2016
12933005	BH01	ES	1.00 - 1.20	11/02/2016
12932944	BH01	ES	10.00	11/02/2016
12932946	BH01	ES	11.00	11/02/2016
12932948	BH01	ES	12.00	11/02/2016
12932950	BH01	ES	13.00	11/02/2016
12932954	BH01	ES	14.00	11/02/2016
12932956	BH01	ES	15.00	11/02/2016
12932907	BH01	ES	2.00	11/02/2016
12932914	BH01	ES	4.00	11/02/2016
12932920	BH01	ES	5.00	11/02/2016
12932937	BH01	ES	6.00	11/02/2016
12932926	BH01	ES	7.00	11/02/2016
12932939	BH01	ES	8.00	11/02/2016
12932941	BH01	ES	9.00	11/02/2016
12932480	BH02		0.00 - 12.00	
12932485	BH02		0.00 - 7.20	
12932478	BH02		0.00 - 8.00	
12932789	BH02	ES	0.20	09/02/2016
12932727	BH02	ES	0.50	09/02/2016
12932493	BH02	ES	1.00	09/02/2016
12932985	BH02	ES	11.00	11/02/2016
12932989	BH02	ES	13.00	11/02/2016
12932991	BH02	ES	14.00	11/02/2016
12932970	BH02	ES	3.00	11/02/2016
12932958	BH02	ES	4.00	11/02/2016
12932978	BH02	ES	5.00	11/02/2016
12932536	BH03	ES	0.10 - 0.30	12/02/2016
12932545	BH03	ES	0.90 - 1.10	12/02/2016
12932588	BH03	ES	10.00	12/02/2016
12932590	BH03	ES	11.00	12/02/2016
12932592	BH03	ES	12.00	12/02/2016
12932594	BH03	ES	13.00	12/02/2016
12932596	BH03	ES	15.00	12/02/2016
12932552	BH03	ES	2.00	12/02/2016
12932558	BH03	ES	3.00	12/02/2016
12932564	BH03	ES	4.00	12/02/2016
12932570	BH03	ES	5.00	12/02/2016
12932582	BH03	ES	6.00	12/02/2016
12932584	BH03	ES	7.00	12/02/2016
12932586	BH03	ES	9.00	12/02/2016
12932487	NO ID			
12932598	TP101	ES	1.00	12/02/2016
12932604	TP101	ES	2.00	12/02/2016
12932615	TP102	ES	1.00	12/02/2016
12932621	TP102	ES	2.00	12/02/2016
12932638	TP103	ES	1.00	12/02/2016
12932644	TP103	ES	2.00	12/02/2016
12932769	TP104	ES	1.00	09/02/2016
12932773	TP104	ES	3.00	09/02/2016
12932759	TP105	ES	1.00	09/02/2016
12932764	TP105	ES	2.00	09/02/2016
12932670	TP106	ES	1.50	09/02/2016
12932609	TP106	ES	2.50	09/02/2016



## CERTIFICATE OF ANALYSIS

SDG:	160216-25	Location:	Whitfield	Order Number:	70012378
Job:	H_WSP_HER-187	Customer:	WSP Environmental	Report Number:	350443
Client Reference:	70012378	Attention:	Ella Niehorster	Superseded Report:	
12932626	TP107	ES	1.00	12/02/2016	
12932632	TP107	ES	3.00	12/02/2016	
12932709	TP108	ES	1.00	09/02/2016	
12932715	TP108	ES	2.00	09/02/2016	
12932721	TP108	ES	2.80	09/02/2016	
12932733	TP109	ES	1.00	09/02/2016	
12932740	TP109	ES	2.00	09/02/2016	
12932778	TP110	ES	1.00	09/02/2016	
12932784	TP110	ES	2.00	09/02/2016	
12932746	TP111	ES	1.00	09/02/2016	
12932751	TP111	ES	2.00	09/02/2016	
12932691	TP112	ES	1.00	09/02/2016	
12932697	TP112	ES	2.00	09/02/2016	
12932703	TP112	ES	2.50	09/02/2016	
12933168	WS01	ES	0.40 - 0.50	11/02/2016	
12933174	WS01	ES	1.00 - 1.10	11/02/2016	
12933181	WS01	ES	1.90	11/02/2016	
12933191	WS01	ES	2.90	11/02/2016	
12933196	WS01	ES	3.90	11/02/2016	
12933202	WS01	ES	4.90	11/02/2016	
12933012	WS03	ES	0.40 - 0.50	11/02/2016	
12933018	WS03	ES	1.00 - 1.10	11/02/2016	
12933029	WS03	ES	1.90	11/02/2016	
12933034	WS03	ES	2.90	11/02/2016	
12933039	WS03	ES	3.90	11/02/2016	
12933044	WS03	ES	4.90	11/02/2016	
12933050	WS04	ES	0.40 - 0.50	11/02/2016	
12933057	WS04	ES	1.00 - 1.10	11/02/2016	
12933062	WS04	ES	1.90	11/02/2016	
12933067	WS04	ES	2.90	11/02/2016	
12933072	WS04	ES	3.90	11/02/2016	
12933077	WS04	ES	4.90	11/02/2016	
12933120	WS105	ES	0.40 - 0.50	11/02/2016	
12933130	WS105	ES	1.00 - 1.10	11/02/2016	
12933136	WS105	ES	1.90	11/02/2016	
12933145	WS105	ES	2.90	11/02/2016	
12933158	WS105	ES	3.90	11/02/2016	
12933163	WS105	ES	4.90	11/02/2016	
12932801	WS106	ES	0.40 - 0.50	09/02/2016	
12932795	WS106	ES	1.00 - 1.10	09/02/2016	
12932807	WS106	ES	1.90	09/02/2016	
12932813	WS106	ES	2.90	09/02/2016	
12932821	WS106	ES	3.90	09/02/2016	
12932829	WS106	ES	4.90	09/02/2016	
12933209	WS107	ES	0.40 - 0.50	11/02/2016	
12933215	WS107	ES	1.00 - 1.10	11/02/2016	
12932510	WS107	ES	1.70	11/02/2016	
12932517	WS107	ES	2.90	11/02/2016	
12932522	WS107	ES	3.90	11/02/2016	
12932528	WS107	ES	4.90	11/02/2016	
12933088	WS108	ES	0.40 - 0.50	11/02/2016	
12933094	WS108	ES	1.00 - 1.10	11/02/2016	
12933099	WS108	ES	1.90	11/02/2016	
12933105	WS108	ES	2.90	11/02/2016	
12933110	WS108	ES	3.90	11/02/2016	
12933115	WS108	ES	4.90	11/02/2016	
12932861	WS109	ES	0.40 - 0.50	09/02/2016	
12932929	WS109	ES	1.00 - 1.10	09/02/2016	
12932854	WS109	ES	1.90	09/02/2016	



## CERTIFICATE OF ANALYSIS

SDG:	160216-25	Location:	Whitfield	Order Number:	70012378
Job:	H_WSP_HER-187	Customer:	WSP Environmental	Report Number:	350443
Client Reference:	70012378	Attention:	Ella Niehorster	Superseded Report:	
12932873	WS109	ES	2.90	09/02/2016	
12932849	WS109	ES	3.90	09/02/2016	
12932867	WS109	ES	4.90	09/02/2016	
12932649	WS110	ES	0.40 - 0.50	11/02/2016	
12932655	WS110	ES	1.00 - 1.10	11/02/2016	
12932660	WS110	ES	1.90	11/02/2016	
12932665	WS110	ES	2.90	11/02/2016	
12932677	WS110	ES	3.90	11/02/2016	
12932684	WS110	ES	4.90	11/02/2016	
12932837	WS111	ES	0.40 - 0.50	09/02/2016	
12932843	WS111	ES	1.00 - 1.10	09/02/2016	
12932900	WS111	ES	1.90	09/02/2016	
12932894	WS111	ES	2.90	09/02/2016	
12932881	WS111	ES	3.90	09/02/2016	
12932888	WS111	ES	4.90	09/02/2016	
12933151	WS112	ES	0.40 - 0.50	09/02/2016	
12932501	WS112	ES	1.00 - 1.10	09/02/2016	
12932576	WS112	ES	1.90	09/02/2016	
12932964	WS112	ES	2.90	09/02/2016	
12933023	WS112	ES	3.90	09/02/2016	
12933082	WS112	ES	4.90	09/02/2016	

Only received samples which have had analysis scheduled will be shown on the following pages.







SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## Sample Descriptions

### Grain Sizes

very fine <0.063mm fine 0.063mm - 0.1mm medium 0.1mm - 2mm coarse 2mm - 10mm very coarse >10mm

Lab Sample No(s)	Customer Sample Ref.	Depth (m)	Colour	Description	Grain size	Inclusions	Inclusions 2
12932993	BH01	0.30 - 0.40	Dark Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	None
12933005	BH01	1.00 - 1.20	White	Chalk	0.063 - 0.1 mm	Stones	None
12932493	BH02	1.00	White	Chalk	0.063 - 0.1 mm	N/A	N/A
12932789	BH02	0.20	White	Chalk	0.063 - 0.1 mm	Stones	N/A
12932536	BH03	0.10 - 0.30	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
12932598	TP101	1.00	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
12932615	TP102	1.00	Light Brown	Clay Loam	0.063 - 0.1 mm	None	None
12932621	TP102	2.00	Light Brown	Clay Loam	0.063 - 0.1 mm	Stones	None
12932638	TP103	1.00	Light Brown	Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
12932769	TP104	1.00	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Stones	None
12932773	TP104	3.00	White	Chalk	0.063 - 0.1 mm	None	None
12932759	TP105	1.00	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	None	None
12932670	TP106	1.50	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	Vegetation	N/A
12932626	TP107	1.00	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	None
12932709	TP108	1.00	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	None
12932733	TP109	1.00	Light Brown	Sandy Clay Loam	0.1 - 2 mm	Stones	Vegetation
12932778	TP110	1.00	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	N/A	N/A
12932746	TP111	1.00	Dark Brown	Clay	<0.063 mm	Stones	None
12932691	TP112	1.00	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
12932703	TP112	2.50	Beige	Chalk	0.063 - 0.1 mm	None	None
12933168	WS01	0.40 - 0.50	White	Chalk	0.063 - 0.1 mm	None	None
12933174	WS01	1.00 - 1.10	White	Chalk	0.063 - 0.1 mm	None	None
12933012	WS03	0.40 - 0.50	Cream	Chalk	<0.063 mm	N/A	None
12933029	WS03	1.90	Cream	Chalk	<0.063 mm	None	None
12933050	WS04	0.40 - 0.50	Dark Brown	Silty Clay	0.063 - 0.1 mm	Stones	Vegetation
12933062	WS04	1.90	Cream	Chalk	<0.063 mm	None	None
12933120	WS105	0.40 - 0.50	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
12932801	WS106	0.40 - 0.50	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	None
12932813	WS106	2.90	Light Brown	Clay	<0.063 mm	N/A	None
12933209	WS107	0.40 - 0.50	Dark Brown	Silty Clay Loam	0.063 - 0.1 mm	None	None
12933088	WS108	0.40 - 0.50	Dark Brown	Clay Loam	0.063 - 0.1 mm	Stones	Vegetation
12933105	WS108	2.90	Cream	Chalk	0.063 - 0.1 mm	None	None
12932861	WS109	0.40 - 0.50	Dark Brown	Clay Loam	0.063 - 0.1 mm	Vegetation	None
12932649	WS110	0.40 - 0.50	Dark Brown	Clay	<0.063 mm	Stones	Vegetation
12932665	WS110	2.90	Cream	Chalk	<0.063 mm	None	None
12932837	WS111	0.40 - 0.50	Dark Brown	Clay	<0.063 mm	Stones	Vegetation
12933151	WS112	0.40 - 0.50	Dark Brown	Clay	<0.063 mm	Stones	Vegetation



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<b>SDG:</b>	160216-25	<b>Location:</b>	Whitfield	<b>Order Number:</b>	70012378
<b>Job:</b>	H_WSP_HER-187	<b>Customer:</b>	WSP Environmental	<b>Report Number:</b>	350443
<b>Client Reference:</b>	70012378	<b>Attention:</b>	Ella Niehorster	<b>Superseded Report:</b>	

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These descriptions are only intended to act as a cross check if sample identities are questioned, and to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample.

Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.



CERTIFICATE OF ANALYSIS

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**Job:** H\_WSP\_HER-187  
**Client Reference:** 70012378

**Location:** Whitfield  
**Customer:** WSP Environmental  
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**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

Results Legend		Customer Sample R	BH01	BH01	BH02	BH02	BH03	TP101
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	BH01	BH01	BH02	BH02	BH03	TP101
M	mCERTS accredited.		0.30 - 0.40	1.00 - 1.20	0.20	1.00	0.10 - 0.30	1.00
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		11/02/2016	11/02/2016	09/02/2016	09/02/2016	12/02/2016	12/02/2016
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
1-5&*\$@	Sample deviation (see appendix)		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
			12932993	12933005	12932789	12932493	12932536	12932598
		ES	ES	ES	ES	ES	ES	
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	8.3	21	12	14	21	19
Soil Organic Matter (SOM)	<0.35 %	TM132	<0.35	<0.35	<0.35	<0.35		
Arsenic	<0.6 mg/kg	TM181	2.64 M	<0.6 #	1.63 #	0.805 #	8.42 M	7.61 M
Barium	<0.6 mg/kg	TM181	72.6 #	9.96 #	12.5 #	14.3 #	65.7 #	91.1 #
Beryllium	<0.01 mg/kg	TM181	0.197 M	0.0715 #	0.0585 #	0.0535 #	0.892 M	0.918 M
Cadmium	<0.02 mg/kg	TM181	<0.02 M	0.279 #	0.193 #	0.218 #	0.311 M	0.976 M
Chromium	<0.9 mg/kg	TM181	8.97 M	1.41 #	2.17 #	1.84 #	25 M	26.9 M
Copper	<1.4 mg/kg	TM181	5.49 M	<1.4 #	2.07 #	4.6 #	14.4 M	8.31 M
Lead	<0.7 mg/kg	TM181	3.06 M	<0.7 #	2.54 #	7.74 #	36 M	21.7 M
Mercury	<0.14 mg/kg	TM181	0.188 M	0.416 #	0.326 #	0.419 #	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	11.7 M	1.38 #	1.52 #	1.6 #	19.5 M	20.2 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181	22.4 #	2.94 #	3.72 #	3.34 #	34.9 #	39.2 #
Zinc	<1.9 mg/kg	TM181	27 M	12.6 #	14.5 #	17.1 #	51.4 M	72 M
Boron, water soluble	<1 mg/kg	TM222	<1 M	<1 #	<1 #	<1 #	<1 M	35.5 M



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Results Legend		Customer Sample R	TP102	TP102	TP103	TP104	TP104	TP105
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	TP102	TP102	TP103	TP104	TP104	TP105
M	mCERTS accredited.		1.00	2.00	1.00	1.00	3.00	1.00
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		12/02/2016	12/02/2016	12/02/2016	09/02/2016	09/02/2016	09/02/2016
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
1-5&*\$@	Sample deviation (see appendix)		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
			12932615	12932621	12932638	12932769	12932773	12932759
		ES	ES	ES	ES	ES	ES	
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	18	17	18	20	22	20
Soil Organic Matter (SOM)	<0.35 %	TM132		<0.35			<0.35	
pH	1 pH Units	TM133		8.25			8.9	
Arsenic	<0.6 mg/kg	TM181	10.5		9.68	7.35		8.04
Barium	<0.6 mg/kg	TM181	66.5		63.5	73.2		56.1
Beryllium	<0.01 mg/kg	TM181	0.84		0.675	0.874		0.661
Cadmium	<0.02 mg/kg	TM181	<0.02		<0.02	0.442		0.0342
Chromium	<0.9 mg/kg	TM181	26.5		27.8	25		22.9
Copper	<1.4 mg/kg	TM181	12.1		9.42	6.27		7.12
Lead	<0.7 mg/kg	TM181	26.7		17.1	21.8		18
Mercury	<0.14 mg/kg	TM181	<0.14		<0.14	<0.14		<0.14
Nickel	<0.2 mg/kg	TM181	21.4		19	21.6		17.5
Selenium	<1 mg/kg	TM181	<1		<1	<1		<1
Vanadium	<0.2 mg/kg	TM181	37		37.6	37.8		34.2
Zinc	<1.9 mg/kg	TM181	47		43.6	62.8		43.2
Boron, water soluble	<1 mg/kg	TM222	<1		<1	3.18		1.97



**CERTIFICATE OF ANALYSIS**

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**Job:** H\_WSP\_HER-187  
**Client Reference:** 70012378

**Location:** Whitfield  
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**Attention:** Ella Niehorster

**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

Results Legend		Customer Sample R	TP106	TP107	TP108	TP109	TP110	TP111
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	1.50	1.00	1.00	1.00	1.00	1.00
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		09/02/2016	12/02/2016	09/02/2016	09/02/2016	09/02/2016	09/02/2016
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
*	Subcontracted test.		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		12932670	12932626	12932709	12932733	12932778	12932746
(F)	Trigger breach confirmed		ES	ES	ES	ES	ES	ES
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Moisture Content Ratio (% of as received sample)	%	PM024	15	18	18	17	15	18
Soil Organic Matter (SOM)	<0.35 %	TM132	0.86 #	<0.35 #	0.428 #		0.503 #	
pH	1 pH Units	TM133	8.16 M	8.19 M	8.26 M		8.06 M	
Arsenic	<0.6 mg/kg	TM181	7.07 M	10.5 M	10.1 M	12.7 M	7.34 M	11.3 M
Barium	<0.6 mg/kg	TM181	59.7 #	60.8 #	65.2 #	74.5 #	63.6 #	72.6 #
Beryllium	<0.01 mg/kg	TM181	0.674 M	0.819 M	0.829 M	0.977 M	0.484 M	1.01 M
Cadmium	<0.02 mg/kg	TM181	0.39 M	<0.02 M	<0.02 M	0.308 M	0.0529 M	<0.02 M
Chromium	<0.9 mg/kg	TM181	22.6 M	28.4 M	25.7 M	35.3 M	19.5 M	31.6 M
Copper	<1.4 mg/kg	TM181	6.91 M	13.3 M	11.3 M	13.8 M	7.25 M	13.1 M
Lead	<0.7 mg/kg	TM181	18.4 M	16 M	19.3 M	18.1 M	16.8 M	22 M
Mercury	<0.14 mg/kg	TM181	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M	<0.14 M
Nickel	<0.2 mg/kg	TM181	15.9 M	24 M	23.3 M	25.6 M	13.5 M	24.1 M
Selenium	<1 mg/kg	TM181	<1 #	<1 #	<1 #	<1 #	<1 #	<1 #
Vanadium	<0.2 mg/kg	TM181	33.9 #	37.6 #	37.5 #	44.9 #	27.6 #	43.1 #
Zinc	<1.9 mg/kg	TM181	47.2 M	47.2 M	46 M	58.6 M	41.9 M	51.7 M
Boron, water soluble	<1 mg/kg	TM222	<1 M	<1 M	<1 M	2.36 M	<1 M	2.63 M



CERTIFICATE OF ANALYSIS

**SDG:** 160216-25  
**Job:** H\_WSP\_HER-187  
**Client Reference:** 70012378

**Location:** Whitfield  
**Customer:** WSP Environmental  
**Attention:** Ella Niehorster

**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

Results Legend		Customer Sample R	TP112	TP112	WS01	WS01	WS03	WS03
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	TP112	TP112	WS01	WS01	WS03	WS03
M	mCERTS accredited.		1.00	2.50	0.40 - 0.50	1.00 - 1.10	0.40 - 0.50	1.90
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		09/02/2016	09/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016
tot.unfilt	Total / unfiltered sample.		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
*	Subcontracted test.		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		12932691	12932703	12933168	12933174	12933012	12933029
(F)	Trigger breach confirmed		ES	ES	ES	ES	ES	ES
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	18	23	23	22	22	22
Soil Organic Matter (SOM)	<0.35 %	TM132			<0.35	<0.35	<0.35	<0.35
Arsenic	<0.6 mg/kg	TM181	12	3.36	<0.6	1.02	0.89	<0.6
Barium	<0.6 mg/kg	TM181	73.9	25.4	7.96	6.32	9.63	7.55
Beryllium	<0.01 mg/kg	TM181	1.11	0.586	0.049	0.0495	0.0846	0.0377
Cadmium	<0.02 mg/kg	TM181	0.0462	1.39	0.288	0.315	0.307	0.267
Chromium	<0.9 mg/kg	TM181	30.5	7.68	1.66	1.43	2	1.1
Copper	<1.4 mg/kg	TM181	13.9	3.37	<1.4	<1.4	<1.4	<1.4
Lead	<0.7 mg/kg	TM181	20.5	3.79	0.841	<0.7	1.66	<0.7
Mercury	<0.14 mg/kg	TM181	<0.14	0.316	0.422	0.41	0.387	0.397
Nickel	<0.2 mg/kg	TM181	27.9	9.13	2.08	1.92	2.41	1.06
Selenium	<1 mg/kg	TM181	<1	<1	<1	<1	<1	<1
Vanadium	<0.2 mg/kg	TM181	41.2	10.4	4.52	3.25	4.09	2.29
Zinc	<1.9 mg/kg	TM181	50.1	25.3	14.8	14.9	16.1	13.3
Boron, water soluble	<1 mg/kg	TM222	<1	<1	<1	<1	<1	<1





CERTIFICATE OF ANALYSIS

**SDG:** 160216-25  
**Job:** H\_WSP\_HER-187  
**Client Reference:** 70012378

**Location:** Whitfield  
**Customer:** WSP Environmental  
**Attention:** Ella Niehorster

**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

Results Legend		Customer Sample R	WS108	WS108	WS109	WS110	WS110	WS111
#	ISO17025 accredited.	<b>Depth (m)</b> <b>Sample Type</b> <b>Date Sampled</b> <b>Sample Time</b> <b>Date Received</b> <b>SDG Ref</b> <b>Lab Sample No.(s)</b> <b>AGS Reference</b>	0.40 - 0.50	2.90	0.40 - 0.50	0.40 - 0.50	2.90	0.40 - 0.50
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		11/02/2016	11/02/2016	09/02/2016	11/02/2016	11/02/2016	09/02/2016
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
1-5&*\$@	Sample deviation (see appendix)		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
			12933088	12933105	12932861	12932649	12932665	12932837
		ES	ES	ES	ES	ES	ES	
Component	LOD/Units	Method						
Moisture Content Ratio (% of as received sample)	%	PM024	19	21	20	19	22	19
Soil Organic Matter (SOM)	<0.35 %	TM132					<0.35	0.391
pH	1 pH Units	TM133					8.99	8.36
Arsenic	<0.6 mg/kg	TM181	10.4	0.804	8.28	8.98	1.01	21.9
Barium	<0.6 mg/kg	TM181	62	10.3	58	54.3	8.57	130
Beryllium	<0.01 mg/kg	TM181	0.715	0.184	0.562	0.734	0.19	4.2
Cadmium	<0.02 mg/kg	TM181	<0.02	0.6	0.142	<0.02	0.393	6.11
Chromium	<0.9 mg/kg	TM181	29.9	2.33	23.5	23	1.71	38.1
Copper	<1.4 mg/kg	TM181	9.99	<1.4	7.25	9.21	1.5	35
Lead	<0.7 mg/kg	TM181	17.6	1.74	17	15.9	<0.7	37.3
Mercury	<0.14 mg/kg	TM181	<0.14	0.364	<0.14	<0.14	0.235	<0.14
Nickel	<0.2 mg/kg	TM181	20.5	5.43	15.6	19	1.77	120
Selenium	<1 mg/kg	TM181	<1	<1	<1	<1	<1	1.35
Vanadium	<0.2 mg/kg	TM181	39.4	3.85	32.5	33.3	3.8	72.5
Zinc	<1.9 mg/kg	TM181	46.7	14.8	41.4	41.9	17.4	194
Boron, water soluble	<1 mg/kg	TM222	<1	<1	<1	<1	<1	<1



SDG: 160216-25
Job: H\_WSP\_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378
Report Number: 350443
Superseded Report:

Table with columns: Results Legend, Customer Sample R, Depth (m), Sample Type, Date Sampled, Sample Time, Date Received, SDG Ref, Lab Sample No.(s), AGS Reference, Component, LOD/Units, Method, and numerical results for various elements like Arsenic, Barium, Beryllium, etc.





SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## OC, OP Pesticides and Triazine Herb

Results Legend		Customer Sample R	BH03	WS01	WS03	WS105	WS107	WS109
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.10 - 0.30	0.40 - 0.50	0.40 - 0.50	0.40 - 0.50	0.40 - 0.50	0.40 - 0.50
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		12/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	09/02/2016
diss.filt	Dissolved / filtered sample.		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
tot.unfilt	Total / unfiltered sample.		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
*	Subcontracted test.		12932536	12933168	12933012	12933120	12933209	12932861
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		ES	ES	ES	ES	ES	ES
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Dichlorvos	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Mevinphos	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Tecnazene	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Trifluralin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Phorate	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Hexachlorocyclohexane (HCH)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Quintozene (PCNB)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Triallate	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Etrimphos	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Disulfoton	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Propetamphos	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos methyl	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dimethoate	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorothalonil	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pirimiphos-methyl	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Telodrin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Hexachlorocyclohexane (HCH)	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methyl parathion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Isodrin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Malathion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Fenitrothion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Triadimefon	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Pendimethalin	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	<0.05 mg/kg	TM073	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05





SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## OC, OP Pesticides and Triazine Herb

Results Legend		Customer Sample R	WS112			
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40 - 0.50			
M	mCERTS accredited.		Soil/Solid			
aq	Aqueous / settled sample.		09/02/2016			
diss.filt	Dissolved / filtered sample.		.			
tot.unfilt	Total / unfiltered sample.		16/02/2016			
*	Subcontracted test.		160216-25			
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery		12933151			
(F)	Trigger breach confirmed		ES			
1-5&*\$@	Sample deviation (see appendix)					
Component	LOD/Units	Method				
Dichlorvos	<0.05 mg/kg	TM073	<0.05			
Mevinphos	<0.05 mg/kg	TM073	<0.05			
Tecnazene	<0.05 mg/kg	TM073	<0.05			
Hexachlorobenzene	<0.05 mg/kg	TM073	<0.05			
Trifluralin	<0.05 mg/kg	TM073	<0.05			
Phorate	<0.05 mg/kg	TM073	<0.05			
alpha-Hexachlorocyclohexane (HCH)	<0.05 mg/kg	TM073	<0.05			
Quintozene (PCNB)	<0.05 mg/kg	TM073	<0.05			
Diazinon	<0.05 mg/kg	TM073	<0.05			
Triallate	<0.05 mg/kg	TM073	<0.05			
Etrimphos	<0.05 mg/kg	TM073	<0.05			
gamma-Hexachlorocyclohexane (HCH / Lindane)	<0.05 mg/kg	TM073	<0.05			
Disulfoton	<0.05 mg/kg	TM073	<0.05			
Propetamphos	<0.05 mg/kg	TM073	<0.05			
Heptachlor	<0.05 mg/kg	TM073	<0.05			
Chlorpyrifos methyl	<0.05 mg/kg	TM073	<0.05			
Dimethoate	<0.05 mg/kg	TM073	<0.05			
Aldrin	<0.05 mg/kg	TM073	<0.05			
Chlorothalonil	<0.05 mg/kg	TM073	<0.05			
Pirimiphos-methyl	<0.05 mg/kg	TM073	<0.05			
Telodrin	<0.05 mg/kg	TM073	<0.05			
beta-Hexachlorocyclohexane (HCH)	<0.05 mg/kg	TM073	<0.05			
Chlorpyrifos	<0.05 mg/kg	TM073	<0.05			
Methyl parathion	<0.05 mg/kg	TM073	<0.05			
Isodrin	<0.05 mg/kg	TM073	<0.05			
Malathion	<0.05 mg/kg	TM073	<0.05			
Fenthion	<0.05 mg/kg	TM073	<0.05			
Fenitrothion	<0.05 mg/kg	TM073	<0.05			
Heptachlor epoxide	<0.05 mg/kg	TM073	<0.05			
Triadimefon	<0.05 mg/kg	TM073	<0.05			
Pendimethalin	<0.05 mg/kg	TM073	<0.05			
Parathion	<0.05 mg/kg	TM073	<0.05			





SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## PAH by GCMS

Results Legend		Customer Sample R	BH01	BH01	BH02	BH02	BH03	TP101
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	BH01	BH01	BH02	BH02	BH03	TP101
M	mCERTS accredited.		0.30 - 0.40	1.00 - 1.20	0.20	1.00	0.10 - 0.30	1.00
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		11/02/2016	11/02/2016	09/02/2016	09/02/2016	12/02/2016	12/02/2016
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Naphthalene-d8 % recovery**	%	TM218	89.3	95.8	112	118	98.1	91.8
Acenaphthene-d10 % recovery**	%	TM218	87.5	93.8	108	117	99.7	92.9
Phenanthrene-d10 % recovery**	%	TM218	83.3	89.1	102	111	97.6	91.8
Chrysene-d12 % recovery**	%	TM218	88.7	94.5	106	118	93.5	87.1
Perylene-d12 % recovery**	%	TM218	95.4	100	115	125	103	95.2
Naphthalene	<0.009 mg/kg	TM218	<0.009 M	<0.009 #	<0.009 #	<0.009 #	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 M	<0.012 #	<0.012 #	<0.012 #	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218	<0.008 M	<0.008 #	<0.008 #	<0.008 #	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218	<0.01 M	<0.01 #	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 #	<0.015 #	<0.015 #	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218	<0.016 M	<0.016 #	<0.016 #	<0.016 #	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218	<0.017 M	<0.017 #	<0.017 #	<0.017 #	0.123 M	0.0234 M
Pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 #	<0.015 #	<0.015 #	0.101 M	0.0234 M
Benz(a)anthracene	<0.014 mg/kg	TM218	<0.014 M	0.0305 #	<0.014 #	<0.014 #	<0.014 M	0.0391 M
Chrysene	<0.01 mg/kg	TM218	<0.01 M	<0.01 #	<0.01 #	<0.01 #	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015 M	<0.015 #	<0.015 #	<0.015 #	0.158 M	0.029 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014 M	<0.014 #	<0.014 #	<0.014 #	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 #	<0.015 #	<0.015 #	<0.015 M	0.0245 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018 M	<0.018 #	<0.018 #	<0.018 #	0.0517 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 M	<0.023 #	<0.023 #	<0.023 #	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024 M	<0.024 #	<0.024 #	<0.024 #	0.0667 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118	<0.118	<0.118	<0.118	0.5	0.139



SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## PAH by GCMS

Results Legend		Customer Sample R	TP102	TP103	TP104	TP105	TP106	TP107
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		1.00	1.00	1.00	1.00	1.50	1.00
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		12/02/2016	12/02/2016	09/02/2016	09/02/2016	09/02/2016	12/02/2016
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
1-5&*\$@	Sample deviation (see appendix)		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
			12932615	12932638	12932769	12932759	12932670	12932626
		ES	ES	ES	ES	ES	ES	
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	96.7	92.2	84.6	80	105	89.6
Acenaphthene-d10 % recovery**	%	TM218	97.2	93.7	82.5	78	103	88.4
Phenanthrene-d10 % recovery**	%	TM218	95.3	92.1	77.8	73.5	97.5	83.9
Chrysene-d12 % recovery**	%	TM218	89	85.8	79	75.4	102	89.5
Perylene-d12 % recovery**	%	TM218	95	92	80.7	76	108	96.6
Naphthalene	<0.009 mg/kg	TM218	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M
Acenaphthene	<0.008 mg/kg	TM218	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M
Fluorene	<0.01 mg/kg	TM218	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Phenanthrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Anthracene	<0.016 mg/kg	TM218	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M
Fluoranthene	<0.017 mg/kg	TM218	<0.017 M	<0.017 M	<0.017 M	<0.017 M	<0.017 M	<0.017 M
Pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Benz(a)anthracene	<0.014 mg/kg	TM218	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Chrysene	<0.01 mg/kg	TM218	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M	<0.014 M
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M	<0.015 M
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024 M	0.0321 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118	<0.118	<0.118	<0.118	<0.118	<0.118

SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

PAH by GCMS

Results Legend		Customer Sample R	TP108	TP109	TP110	TP111	TP112	TP112
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	TP108	TP109	TP110	TP111	TP112	TP112
M	mCERTS accredited.		1.00	1.00	1.00	1.00	1.00	2.50
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		09/02/2016	09/02/2016	09/02/2016	09/02/2016	09/02/2016	09/02/2016
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Naphthalene-d8 % recovery**	%	TM218	93.5	105	85	107	94.2	93.3
Acenaphthene-d10 % recovery**	%	TM218	96.3	107	80.6	110	95.2	94.6
Phenanthrene-d10 % recovery**	%	TM218	92.9	103	75.6	105	93.5	93
Chrysene-d12 % recovery**	%	TM218	85.9	96.5	79.1	99	88.2	86.6
Perylene-d12 % recovery**	%	TM218	94	95.4	83.4	98.1	95.9	91.5
Naphthalene	<0.009 mg/kg	TM218	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 M	<0.009 #
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 M	<0.012 #
Acenaphthene	<0.008 mg/kg	TM218	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 M	<0.008 #
Fluorene	<0.01 mg/kg	TM218	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 M	<0.01 #
Phenanthrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	0.0402 M	<0.015 M	<0.015 #
Anthracene	<0.016 mg/kg	TM218	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 M	<0.016 #
Fluoranthene	<0.017 mg/kg	TM218	<0.017 M	<0.017 M	<0.017 M	0.0768 M	<0.017 M	<0.017 #
Pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	0.0614 M	<0.015 M	<0.015 #
Benz(a)anthracene	<0.014 mg/kg	TM218	<0.014 M	<0.014 M	<0.014 M	0.0459 M	<0.014 M	<0.014 #
Chrysene	<0.01 mg/kg	TM218	<0.01 M	<0.01 M	<0.01 M	0.0348 M	<0.01 M	<0.01 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	0.0352 M	<0.015 M	<0.015 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014 M	<0.014 M	<0.014 M	0.021 M	<0.014 M	<0.014 #
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 M	0.0362 M	<0.015 M	<0.015 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 M	<0.018 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 M	<0.023 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 M	<0.024 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118	<0.118	<0.118	0.351	<0.118	<0.118



SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## PAH by GCMS

Results Legend		Customer Sample R	WS01	WS01	WS03	WS03	WS04	WS04
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference	0.40 - 0.50	1.00 - 1.10	0.40 - 0.50	1.90	0.40 - 0.50	1.90
M	mCERTS accredited.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
aq	Aqueous / settled sample.		11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016	11/02/2016
diss.filt	Dissolved / filtered sample.							
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Naphthalene-d8 % recovery**	%	TM218	108	96.8	268	118	114	116
Acenaphthene-d10 % recovery**	%	TM218	109	98.6	262	118	117	114
Phenanthrene-d10 % recovery**	%	TM218	105	96.1	244	111	112	107
Chrysene-d12 % recovery**	%	TM218	91.4	89.5	227	99	102	101
Perylene-d12 % recovery**	%	TM218	98.6	99.8	230	104	109	101
Naphthalene	<0.009 mg/kg	TM218	<0.009 #	<0.009 #	<0.009 #	<0.009 #	<0.009 M	<0.009 #
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 #	<0.012 #	<0.012 #	<0.012 #	<0.012 M	<0.012 #
Acenaphthene	<0.008 mg/kg	TM218	<0.008 #	<0.008 #	<0.008 #	<0.008 #	<0.008 M	<0.008 #
Fluorene	<0.01 mg/kg	TM218	<0.01 #	<0.01 #	<0.01 #	<0.01 #	<0.01 M	<0.01 #
Phenanthrene	<0.015 mg/kg	TM218	<0.015 #	<0.015 #	<0.015 #	<0.015 #	<0.015 M	<0.015 #
Anthracene	<0.016 mg/kg	TM218	<0.016 #	<0.016 #	<0.016 #	<0.016 #	<0.016 M	<0.016 #
Fluoranthene	<0.017 mg/kg	TM218	0.025 #	0.0239 #	0.0719 #	<0.017 #	<0.017 M	<0.017 #
Pyrene	<0.015 mg/kg	TM218	0.0214 #	<0.015 #	0.0606 #	<0.015 #	<0.015 M	<0.015 #
Benz(a)anthracene	<0.014 mg/kg	TM218	<0.014 #	0.0344 #	0.096 #	<0.014 #	<0.014 M	<0.014 #
Chrysene	<0.01 mg/kg	TM218	<0.01 #	<0.01 #	0.0344 #	<0.01 #	<0.01 M	<0.01 #
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015 #	<0.015 #	0.0479 #	<0.015 #	<0.015 M	<0.015 #
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014 #	<0.014 #	0.0235 #	<0.014 #	<0.014 M	<0.014 #
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015 #	<0.015 #	0.0381 #	<0.015 #	<0.015 M	<0.015 #
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018 #	<0.018 #	0.026 #	<0.018 #	<0.018 M	<0.018 #
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 #	<0.023 #	<0.023 #	<0.023 #	<0.023 M	<0.023 #
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024 #	<0.024 #	0.0365 #	<0.024 #	<0.024 M	<0.024 #
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118	<0.118	0.435	<0.118	<0.118	<0.118





SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## PAH by GCMS

Results Legend		Customer Sample R	WS105	WS106	WS106	WS107	WS108	WS108
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.40 - 0.50	0.40 - 0.50	2.90	0.40 - 0.50	0.40 - 0.50	2.90
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid
diss.filt	Dissolved / filtered sample.		11/02/2016	09/02/2016	09/02/2016	11/02/2016	11/02/2016	11/02/2016
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed		16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016	16/02/2016
1-5&*\$@	Sample deviation (see appendix)		160216-25	160216-25	160216-25	160216-25	160216-25	160216-25
			12933120	12932801	12932813	12933209	12933088	12933105
		ES	ES	ES	ES	ES	ES	
Component	LOD/Units	Method						
Naphthalene-d8 % recovery**	%	TM218	80.7	98.2	85.5	117	95.8	91.3
Acenaphthene-d10 % recovery**	%	TM218	79.5	98.8	84.3	116	96.7	92.7
Phenanthrene-d10 % recovery**	%	TM218	73.6	96.4	79.4	110	95.5	91
Chrysene-d12 % recovery**	%	TM218	63.5	89.2	81.3	99.3	90.3	86.3
Perylene-d12 % recovery**	%	TM218	70.4	96.7	83.1	92.7	97	93.6
Naphthalene	<0.009 mg/kg	TM218	<0.009	<0.009	<0.009	<0.009	<0.009	<0.009
Acenaphthylene	<0.012 mg/kg	TM218	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Acenaphthene	<0.008 mg/kg	TM218	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Fluorene	<0.01 mg/kg	TM218	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenanthrene	<0.015 mg/kg	TM218	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Anthracene	<0.016 mg/kg	TM218	<0.016	<0.016	<0.016	<0.016	<0.016	<0.016
Fluoranthene	<0.017 mg/kg	TM218	<0.017	<0.017	<0.017	<0.017	<0.017	<0.017
Pyrene	<0.015 mg/kg	TM218	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Benz(a)anthracene	<0.014 mg/kg	TM218	0.0232	0.0254	<0.014	<0.014	<0.014	<0.014
Chrysene	<0.01 mg/kg	TM218	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014	<0.014	<0.014	<0.014	<0.014	<0.014
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018	<0.018	<0.018	<0.018	<0.018	<0.018
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023	<0.023	<0.023	<0.023	<0.023	<0.023
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024	<0.024	<0.024	<0.024	<0.024	<0.024
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118	<0.118	<0.118	<0.118	<0.118	<0.118



SDG: 160216-25  
 Job: H\_WSP\_HER-187  
 Client Reference: 70012378

Location: Whitfield  
 Customer: WSP Environmental  
 Attention: Ella Niehorster

Order Number: 70012378  
 Report Number: 350443  
 Superseded Report:

## PAH by GCMS

Results Legend		Customer Sample R	WS109	WS110	WS110	WS111	WS112	
#	ISO17025 accredited.	Depth (m) Sample Type Date Sampled Sample Time Date Received SDG Ref Lab Sample No.(s) AGS Reference						
M	mCERTS accredited.		0.40 - 0.50	0.40 - 0.50	2.90	0.40 - 0.50	0.40 - 0.50	
aq	Aqueous / settled sample.		Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	Soil/Solid	
diss.filt	Dissolved / filtered sample.		09/02/2016	11/02/2016	11/02/2016	09/02/2016	09/02/2016	
tot.unfilt	Total / unfiltered sample.							
*	Subcontracted test.							
**	% recovery of the surrogate standard to check the efficiency of the method. The results of individual compounds within samples aren't corrected for the recovery							
(F)	Trigger breach confirmed							
1-5&*\$@	Sample deviation (see appendix)							
Component	LOD/Units		Method					
Naphthalene-d8 % recovery**	%	TM218	91.7	125	126	131	91	
Acenaphthene-d10 % recovery**	%	TM218	93	126	128	128	92.3	
Phenanthrene-d10 % recovery**	%	TM218	92.3	121	122	124	91.5	
Chrysene-d12 % recovery**	%	TM218	86.5	109	110	120	86.3	
Perylene-d12 % recovery**	%	TM218	92.8	116	113	116	93.3	
Naphthalene	<0.009 mg/kg	TM218	<0.009 M	<0.009 M	<0.009 #	<0.009 M	<0.009 M	
Acenaphthylene	<0.012 mg/kg	TM218	<0.012 M	<0.012 M	<0.012 #	<0.012 M	<0.012 M	
Acenaphthene	<0.008 mg/kg	TM218	<0.008 M	<0.008 M	<0.008 #	<0.008 M	<0.008 M	
Fluorene	<0.01 mg/kg	TM218	<0.01 M	<0.01 M	<0.01 #	<0.01 M	<0.01 M	
Phenanthrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 #	0.0295 M	<0.015 M	
Anthracene	<0.016 mg/kg	TM218	<0.016 M	<0.016 M	<0.016 #	<0.016 M	<0.016 M	
Fluoranthene	<0.017 mg/kg	TM218	<0.017 M	<0.017 M	<0.017 #	0.0514 M	0.0221 M	
Pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 #	0.0425 M	0.0179 M	
Benz(a)anthracene	<0.014 mg/kg	TM218	<0.014 M	<0.014 M	<0.014 #	<0.014 M	0.0338 M	
Chrysene	<0.01 mg/kg	TM218	<0.01 M	<0.01 M	<0.01 #	0.0248 M	<0.01 M	
Benzo(b)fluoranthene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 #	0.0313 M	0.0189 M	
Benzo(k)fluoranthene	<0.014 mg/kg	TM218	<0.014 M	<0.014 M	<0.014 #	<0.014 M	<0.014 M	
Benzo(a)pyrene	<0.015 mg/kg	TM218	<0.015 M	<0.015 M	<0.015 #	0.0208 M	<0.015 M	
Indeno(1,2,3-cd)pyrene	<0.018 mg/kg	TM218	<0.018 M	<0.018 M	<0.018 #	<0.018 M	<0.018 M	
Dibenzo(a,h)anthracene	<0.023 mg/kg	TM218	<0.023 M	<0.023 M	<0.023 #	<0.023 M	<0.023 M	
Benzo(g,h,i)perylene	<0.024 mg/kg	TM218	<0.024 M	<0.024 M	<0.024 #	<0.024 M	<0.024 M	
PAH, Total Detected USEPA 16	<0.118 mg/kg	TM218	<0.118	<0.118	<0.118	0.2	<0.118	











CERTIFICATE OF ANALYSIS

SDG: 160216-25
Job: H\_WSP\_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378
Report Number: 350443
Superseded Report:

VOC MS (S)

Table with columns for Component, LOD/Units, Method, and sample identifiers (BH01, BH02, TP102, TP104). Rows include Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, and Tert-amyl methyl ether.







CERTIFICATE OF ANALYSIS

SDG: 160216-25
Job: H\_WSP\_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378
Report Number: 350443
Superseded Report:

VOC MS (S)

Table with columns for Component, LOD/Units, Method, and sample IDs (WS03, WS04, WS105, WS106). Rows include Benzene, Toluene, Ethylbenzene, p/m-Xylene, o-Xylene, and Tert-amyl methyl ether.



CERTIFICATE OF ANALYSIS

Validated

SDG: 160216-25
Job: H\_WSP\_HER-187
Client Reference: 70012378

Location: Whitfield
Customer: WSP Environmental
Attention: Ella Niehorster

Order Number: 70012378
Report Number: 350443
Superseded Report:

VOC MS (S)

Table with columns for Component, LOD/Units, Method, and results for samples WS110 and WS111. Includes a Results Legend and Customer Sample R details.



**SDG:** 160216-25  
**Job:** H\_WSP\_HER-187  
**Client Reference:** 70012378

**Location:** Whitfield  
**Customer:** WSP Environmental  
**Attention:** Ella Niehorster

**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

## Asbestos Identification - Solid Samples

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH01 ES 0.30 - 0.40 SOLID 11/02/2016 00:00:00 17/02/2016 11:04:52 160216-25 12932993 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH01 ES 1.00 - 1.20 SOLID 11/02/2016 00:00:00 17/02/2016 09:59:08 160216-25 12933005 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH02 ES 0.20 SOLID 09/02/2016 00:00:00 17/02/2016 11:09:26 160216-25 12932789 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	BH02 ES 1.00 SOLID 09/02/2016 00:00:00 16/02/2016 13:33:55 160216-25 12932493 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP106 ES 1.50 SOLID 09/02/2016 00:00:00 16/02/2016 13:40:50 160216-25 12932670 TM048	19/02/2016	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



**SDG:** 160216-25  
**Job:** H\_WSP\_HER-187  
**Client Reference:** 70012378

**Location:** Whitfield  
**Customer:** WSP Environmental  
**Attention:** Ella Niehorster

**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP107 ES 1.00 SOLID 12/02/2016 00:00:00 17/02/2016 01:34:29 160216-25 12932626 TM048	19/02/2016	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP108 ES 1.00 SOLID 09/02/2016 00:00:00 17/02/2016 10:03:10 160216-25 12932709 TM048	19/02/2016	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	TP110 ES 1.00 SOLID 09/02/2016 00:00:00 16/02/2016 12:12:04 160216-25 12932778 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS01 ES 0.40 - 0.50 SOLID 11/02/2016 00:00:00 17/02/2016 10:07:18 160216-25 12933168 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS01 ES 1.00 - 1.10 SOLID 11/02/2016 00:00:00 17/02/2016 01:49:34 160216-25 12933174 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS03 ES 0.40 - 0.50 SOLID 11/02/2016 00:00:00 17/02/2016 10:05:50 160216-25 12933012 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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**Order Number:** 70012378  
**Report Number:** 350443  
**Superseded Report:**

		Date of Analysis	Analysed By	Comments	Amosite (Brown) Asbestos	Chrysotile (White) Asbestos	Crocidolite (Blue) Asbestos	Fibrous Actinolite	Fibrous Anthophyllite	Fibrous Tremolite	Non-Asbestos Fibre
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS03 ES 1.90 SOLID 11/02/2016 00:00:00 17/02/2016 10:10:08 160216-25 12933029 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS04 ES 0.40 - 0.50 SOLID 11/02/2016 00:00:00 17/02/2016 10:09:15 160216-25 12933050 TM048	19/02/2016	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS04 ES 1.90 SOLID 11/02/2016 00:00:00 17/02/2016 10:12:00 160216-25 12933062 TM048	19/02/2016	Rebecca Rawlings	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS105 ES 0.40 - 0.50 SOLID 11/02/2016 00:00:00 17/02/2016 03:08:05 160216-25 12933120 TM048	19/02/2016	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS106 ES 0.40 - 0.50 SOLID 09/02/2016 00:00:00 16/02/2016 13:36:05 160216-25 12932801 TM048	19/02/2016	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected
Cust. Sample Ref. Depth (m) Sample Type Date Sampled Date Received SDG Original Sample Method Number	WS111 ES 0.40 - 0.50 SOLID 09/02/2016 00:00:00 17/02/2016 03:33:38 160216-25 12932837 TM048	19/02/2016	Chris Swindells	-	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected (#)	Not Detected



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**Superseded Report:**

## Table of Results - Appendix

Method No	Reference	Description	Wet/Dry Sample <sup>1</sup>	Surrogate Corrected
ASB_PREP				
PM001		Preparation of Samples for Metals Analysis		
PM024	Modified BS 1377	Soil preparation including homogenisation, moisture screens of soils for Asbestos Containing Material		
TM048	HSG 248, Asbestos: The analysts' guide for sampling, analysis and clearance procedures	Identification of Asbestos in Bulk Material		
TM073	MEWAM BOOK 60 1980,95 1985, HMSO / Modified: US EPA Method 8081A & 8141A	Determination of organochlorine and organophosphorous pesticides by GCMS		
TM089	Modified: US EPA Methods 8020 & 602	Determination of Gasoline Range Hydrocarbons (GRO) and BTEX (MTBE) compounds by Headspace GC-FID (C4-C12)		
TM116	Modified: US EPA Method 8260, 8120, 8020, 624, 610 & 602	Determination of Volatile Organic Compounds by Headspace / GC-MS		
TM132	In - house Method	ELTRA CS800 Operators Guide		
TM133	BS 1377: Part 3 1990;BS 6068-2.5	Determination of pH in Soil and Water using the GLpH pH Meter		
TM173	Analysis of Petroleum Hydrocarbons in Environmental Media – Total Petroleum Hydrocarbon Criteria	Determination of Speciated Extractable Petroleum Hydrocarbons in Soils by GC-FID		
TM181	US EPA Method 6010B	Determination of Routine Metals in Soil by iCap 6500 Duo ICP-OES		
TM218	Microwave extraction – EPA method 3546	Microwave extraction - EPA method 3546		
TM222	In-House Method	Determination of Hot Water Soluble Boron in Soils (10:1 Water:soil) by IRIS Emission Spectrometer		

<sup>1</sup> Applies to Solid samples only. DRY indicates samples have been dried at 35°C. NA = not applicable.



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**Report Number:** 350443  
**Superseded Report:**

### Test Completion Dates

Lab Sample No(s) Customer Sample Ref.	12932993	12933005	12932493	12932789	12932536	12932598	12932615	12932621	12932638	12932769
	BH01	BH01	BH02	BH02	BH03	TP101	TP102	TP102	TP103	TP104
	AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES
	Depth	0.30 - 0.40	1.00 - 1.20	1.00	0.20	0.10 - 0.30	1.00	1.00	2.00	1.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016						
Boron Water Soluble	19-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016		18-Feb-2016	19-Feb-2016
EPH CWG (Aliphatic) GC (S)	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016				18-Feb-2016		
EPH CWG (Aromatic) GC (S)	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016				18-Feb-2016		
GRO by GC-FID (S)	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016				18-Feb-2016		
Metals in solid samples by OES	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016		18-Feb-2016	19-Feb-2016
OC, OP Pesticides and Triazine Herb					20-Feb-2016					
PAH by GCMS	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016		19-Feb-2016	18-Feb-2016
pH								19-Feb-2016		
Sample description	17-Feb-2016	17-Feb-2016	16-Feb-2016	16-Feb-2016	16-Feb-2016	16-Feb-2016	16-Feb-2016	16-Feb-2016	16-Feb-2016	17-Feb-2016
Total Organic Carbon	18-Feb-2016	18-Feb-2016	19-Feb-2016	18-Feb-2016				22-Feb-2016		
TPH CWG GC (S)	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016				18-Feb-2016		
VOC MS (S)	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016				17-Feb-2016		

Lab Sample No(s) Customer Sample Ref.	12932773	12932759	12932670	12932626	12932709	12932733	12932778	12932746	12932691	12932703
	TP104	TP105	TP106	TP107	TP108	TP109	TP110	TP111	TP112	TP112
	AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES
	Depth	3.00	1.00	1.50	1.00	1.00	1.00	1.00	1.00	1.00
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples			19-Feb-2016	19-Feb-2016	19-Feb-2016		19-Feb-2016			
Boron Water Soluble		19-Feb-2016	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	18-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016
EPH CWG (Aliphatic) GC (S)	19-Feb-2016		18-Feb-2016	18-Feb-2016	18-Feb-2016		19-Feb-2016			
EPH CWG (Aromatic) GC (S)	19-Feb-2016		18-Feb-2016	18-Feb-2016	18-Feb-2016		19-Feb-2016			
GRO by GC-FID (S)	18-Feb-2016		18-Feb-2016	18-Feb-2016	18-Feb-2016		18-Feb-2016			
Metals in solid samples by OES		19-Feb-2016	18-Feb-2016	18-Feb-2016	19-Feb-2016	22-Feb-2016	18-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016
PAH by GCMS		18-Feb-2016	19-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016
pH	19-Feb-2016		18-Feb-2016	19-Feb-2016	19-Feb-2016		19-Feb-2016			
Sample description	17-Feb-2016	17-Feb-2016	16-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	16-Feb-2016	17-Feb-2016	16-Feb-2016	16-Feb-2016
Total Organic Carbon	19-Feb-2016		19-Feb-2016	19-Feb-2016	19-Feb-2016		19-Feb-2016			
TPH CWG GC (S)	19-Feb-2016		18-Feb-2016	18-Feb-2016	18-Feb-2016		19-Feb-2016			
VOC MS (S)	18-Feb-2016		18-Feb-2016	18-Feb-2016	18-Feb-2016		18-Feb-2016			

Lab Sample No(s) Customer Sample Ref.	12933168	12933174	12933012	12933029	12933050	12933062	12933120	12932801	12932813	12933209
	WS01	WS01	WS03	WS03	WS04	WS04	WS105	WS106	WS106	WS107
	AGS Ref.	ES	ES	ES	ES	ES	ES	ES	ES	ES
	Depth	0.40 - 0.50	1.00 - 1.10	0.40 - 0.50	1.90	0.40 - 0.50	1.90	0.40 - 0.50	0.40 - 0.50	2.90
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016		
Boron Water Soluble	18-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	17-Feb-2016
EPH CWG (Aliphatic) GC (S)	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016		
EPH CWG (Aromatic) GC (S)	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016		
GRO by GC-FID (S)	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016		
Metals in solid samples by OES	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	18-Feb-2016
OC, OP Pesticides and Triazine Herb	20-Feb-2016		20-Feb-2016				20-Feb-2016			20-Feb-2016
PAH by GCMS	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016
pH							19-Feb-2016	19-Feb-2016		
Sample description	17-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	16-Feb-2016
Total Organic Carbon	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016		
TPH CWG GC (S)	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016		
VOC MS (S)	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016	18-Feb-2016		



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**Superseded Report:**

Lab Sample No(s) Customer Sample Ref.	12933088	12933105	12932861	12932649	12932665	12932837	12933151
	WS108	WS108	WS109	WS110	WS110	WS111	WS112
AGS Ref.	ES	ES	ES	ES	ES	ES	ES
Depth	0.40 - 0.50	2.90	0.40 - 0.50	0.40 - 0.50	2.90	0.40 - 0.50	0.40 - 0.50
Type	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
Asbestos ID in Solid Samples						19-Feb-2016	
Boron Water Soluble	18-Feb-2016	18-Feb-2016	18-Feb-2016	19-Feb-2016	19-Feb-2016	18-Feb-2016	18-Feb-2016
EPH CWG (Aliphatic) GC (S)					19-Feb-2016	18-Feb-2016	
EPH CWG (Aromatic) GC (S)					19-Feb-2016	18-Feb-2016	
GRO by GC-FID (S)					18-Feb-2016	18-Feb-2016	
Metals in solid samples by OES	18-Feb-2016	18-Feb-2016	18-Feb-2016	19-Feb-2016	22-Feb-2016	18-Feb-2016	18-Feb-2016
OC, OP Pesticides and Triazine Herb			20-Feb-2016				20-Feb-2016
PAH by GCMS	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	19-Feb-2016	22-Feb-2016	19-Feb-2016
pH					19-Feb-2016	19-Feb-2016	
Sample description	16-Feb-2016	16-Feb-2016	16-Feb-2016	17-Feb-2016	17-Feb-2016	17-Feb-2016	16-Feb-2016
Total Organic Carbon					19-Feb-2016	19-Feb-2016	
TPH CWG GC (S)					19-Feb-2016	18-Feb-2016	
VOC MS (S)					18-Feb-2016	18-Feb-2016	





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## Appendix

## General

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following: NRA and CEN Leach tests, flash point LOI, pH, ammonium as NH<sub>4</sub> by the BRE method, VOC TICs and SVOC TICs.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for all sample types unless the sample is destroyed on testing. The prepared soil sub sample that is analysed for asbestos will be retained for a period of 6 months after the analysis date. All bulk samples will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, the individual sub sample scheduled will be analysed in house for the presence of asbestos fibres and asbestos containing material by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If a specific asbestos fibre type is not found this will be reported as "Not detected". If no asbestos fibre types are found all will be reported as "Not detected" and the sub sample analysed deemed to be clear of asbestos. If an asbestos fibre type is found it will be reported as detected (for each fibre type found). Testing can be carried out on asbestos positive samples, but, due to Health and Safety considerations, may be replaced by alternative tests or reported as No Determination Possible (NDP). The quantity of asbestos present is not determined unless specifically requested.

7. If no separate volatile sample is supplied by the client, or if a headspace or sediment is present in the volatile sample, the integrity of the data may be compromised. This will be flagged up as an invalid VOC on the test schedule and the result marked as deviating on the test certificate.

8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.

9. NDP - No determination possible due to insufficient/unsuitable sample.

10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals - total metals must be requested separately.

11. Results relate only to the items tested.

12. LoDs (Limit of Detection) for wet tests reported on a dry weight basis are not corrected for moisture content.

13. **Surrogate recoveries** - Surrogates are added to your sample to monitor recovery of the test requested. A % recovery is reported, results are not corrected for the recovery measured. Typical recoveries for organics tests are 70-130%, they are generally wider for volatiles analysis, 50-150%. Recoveries in soils are affected by organic rich or clay rich matrices. Waters can be affected by remediation fluids or high amounts of sediment. Test results are only ever reported if all of the associated quality checks pass; it is assumed that all recoveries outside of the values above are due to matrix affect.

14. **Product analyses** - Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.

15. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethylphenol, 3,5 Dimethylphenol).

16. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 15).

17. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.

18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.

19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.

20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.

21. For leachate preparations other than Zero Headspace Extraction (ZHE) volatile loss may occur.

22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C5-C12 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

24. **Tentatively Identified Compounds (TICs)** are non-target peaks in VOC and SVOC analysis. All non-target peaks detected with a concentration above the LoD are subjected to a mass spectral library search. Non-target peaks with a library search confidence of >75% are reported based on the best mass spectral library match. When a non-target peak with a library search confidence of <75% is detected it is reported as "mixed hydrocarbons". Non-target compounds identified from the scan data are semi-quantified relative to one of the deuterated internal standards, under the same chromatographic conditions as the target compounds. This result is reported as a semi-quantitative value and reported as Tentatively Identified Compounds (TICs). TICs are outside the scope of UKAS accreditation and are not moisture corrected.

## Sample Deviations

1	Container with Headspace provided for volatiles analysis
2	Incorrect container received
3	Deviation from method
4	Holding time exceeded before sample received
5	Samples exceeded holding time before preservation was performed
\$	Sampled on date not provided
+	Sample holding time exceeded in laboratory
@	Sample holding time exceeded due to sampled on date
&	Sample Holding Time exceeded - Late arrival of instructions.

## Asbestos

### Identification of Asbestos in Bulk Materials & Soils

The results for identification of asbestos in bulk materials are obtained from supplied bulk materials which have been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

The results for identification of asbestos in soils are obtained from a homogenised sub sample which has been examined to determine the presence of asbestos fibres using ALcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Asbestos Type	Common Name
Crystalline	White Asbestos
Amphibole	Brown Asbestos
Crystalline	Blue Asbestos
Fibrous Asbestos	-
Fibrous Amphibole	-
Fibrous Tremolite	-

### Visual Estimation Of Fibre Content

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: - Trace - Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in HSG 264.

The identification of asbestos containing materials and soils falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

# Appendix I

**GAS MONITORING DATA**

# Groundwater and Ground Gas Monitoring Summary



Site Name	Whitfield
Client	Halsbury Homes
Job No.	70012378

Start Date	17/02/2016
End Date	03/03/2016
No. Visits	3

	Borehole	Methane (% v/v)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Flow (l/hr)		Standing Water Level (m)		Gas Screening Value Methane (l/hr)	Gas Screening Value Carbon Dioxide (l/hr)
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
1	BH01	0.0	0.0	0.0	0.3	18.5	19.8	-0.3	2.7	0.00	0.00		0.0081
2	WS105	0.0	0.0	0.8	2.1	17.4	19.4	-0.6	0.9	0.00	0.00		0.0189
3	WS106	0.0	0.0	0.9	1.6	18.4	19.2	-0.1	0.7	0.00	0.00		0.0112
4	WS107	0.0	0.0	0.0	0.7	18.9	20.0	0.1	1.5	0.00	0.00		0.0105
5	WS108	0.0	0.0	0.0	2.3	18.1	20.1	-0.1	1.0	0.00	0.00		0.023
6	WS109	0.0	0.0	0.0	1.1	18.9	20.0	-1.2	1.8	0.00	0.00		0.0198
7	WS110	0.0	0.0	0.0	2.0	18.1	20.1	0.0	1.0	0.00	0.00		0.02
8	WS111	0.0	0.0	0.0	2.0	18.1	20.1	-0.1	2.7	0.00	0.00		0.054
9	WS112	0.0	0.0	0.0	1.3	18.8	19.9	-0.9	1.8	0.00	0.00		0.0234
10	BH03	0.0	0.0	0.0	2.1	17.1	20.1	-1.0	1.6	0.00	0.00		0.0336
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# Groundwater and Ground Gas Monitoring Summary



Site Name	Whitfield
Client	Halsbury Homes
Job No.	70012378

Start Date	17/02/2016
End Date	03/03/2016
No. Visits	3

	Borehole	Standing Water Level (m)		Response Zone		Thickness of Product (mm)		PID Readings ppmV		H2S ppm	CO ppm	Was the well ever flooded?	Was Product >1mm detected?
		MIN	MAX	TOP	BASE	MIN	MAX	MIN	MAX	MAX	MAX		
1	BH01	0.0	0.0	12.3	15.2	0	0	0	0	0	10	Yes	No
2	WS105	0.0	0.0	3.5	5.0	0	0	0	0	0	0	Yes	No
3	WS106	0.0	0.0	3.0	5.0	0	0	0	0	0	0	Yes	No
4	WS107	0.0	0.0	2.0	5.0	0	0	0	0	0	0	Yes	No
5	WS108	0.0	0.0	2.8	5.0	0	0	0	0	0	0	Yes	No
6	WS109	0.0	0.0	3.0	5.0	0	0	0	0	0	0	Yes	No
7	WS110	0.0	0.0	2.0	5.0	0	0	0	0	0	0	Yes	No
8	WS111	0.0	0.0	1.5	5.0	0	0	0	0	0	0	Yes	No
9	WS112	0.0	0.0	1.5	5.0	0	0	0	0	0	0	Yes	No
10	BH03	0.0	0.0	12.3	15.3	0	0	0	0	0	0	Yes	No
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# Groundwater and Ground Gas Monitoring Summary



Site Name	Whitfield
Client	Halsbury Homes
Job No.	70012378

Start Date	17/02/2016
End Date	03/03/2016
No. Visits	3

Visit No.	Visit Date	Pressure Trend	Start mB	End mB
1	17/02/2016	Falling	1016	1014
2	22/02/2016	Falling	994	993
3	03/03/2016	No Change	993	993
4				
5				
6				
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17				
18				
19				
20				
21				
22				
23				
24				

	Minimum mB	Maximum mB
Barometric Pressure	993	1016

### Gas Screening Value (GSV) Calculation

	GSV Max per hole* (l/hr)	GSV using Max Values** (l/hr)	Maximum Values (% v/v)
Carbon Dioxide	0.054	<b>0.0621</b>	2.3

Methane	0	<b>0</b>	0.0
---------	---	----------	-----

Max Flow (l/hr)	2.7
-----------------	-----

Key	Methane Column	Carbon Dioxide Column	Depth to Water Column	Gas Flow
	n/a	n/a	Response Zone Part Flooded	n/a
	> 1% v/v	> 5% v/v	Response Zone Totally Flooded	>70 l/hr

\*GSV Max Per Hole is the maximum calculated GSV using data specific to each borehole over the monitoring period.

\*\*GSV Using Max Values is a worst case estimated of the GSV using Maximum Concentration and Maximum Flow for the whole data set.

### CIRIA C665 - Table 8.5 (Refer to CIRIA document for full table and notes) (2007)

	Characteristic Situation (CIRIA R149)	Comparable PIT gas regime	Risk Classification	Gas Screening Value (l/hr)	Additional Factors
	1	A	Very Low Risk	<0.07	Typically methane ≤ 1% and/or carbon dioxide ≤ 5% otherwise consider increase to Characteristic Situation 2
	2	B	Low Risk	<0.7	Borehole air flow rate not to exceed 70l/hr. Otherwise consider increase to Characteristic Situation 3
	3	C	Moderate Risk	<3.5	
	4	D	Moderate to High Risk	<15	Quantitative Risk Assessment required to evaluate scope of protection measures
	5	E	High Risk	<70	
	6	F	Very High Risk	>70	

### NHBC Report No. 4 - Table 14.1 (Refer to NHBC document for full table) (March 2007)

Traffic Light Classification	Methane		Carbon Dioxide	
	Typical Max Concentration (%v/v)	Gas Screening Value (l/hr)	Typical Max Concentration (%v/v)	Gas Screening Value (l/hr)
Green				
Amber	1	0.13	5	0.78
Amber 2	5	0.63	10	1.6
Red	20	1.6	30	3.1

#### Notes:

- The worst-case ground gas regime identified on the site, either methane or carbon dioxide, at the worst case temporal conditions that the site may be expected to encounter will be the decider as to what Traffic Light is allocated.
- Borehole Gas Volume Flow Rate, in litres per hour is defined as Wilson and Card (1999), is the borehole flow rate multiplied by the concentrations in the air stream of the particular gas being considered;
- The typical Maximum Concentration can be exceeded in certain circumstances should the conceptual model indicate that it is safe to do so;
- The Gas Screening Value Threshold should not generally be exceeded without the completion of a detailed ground gas risk assessment taking into account site-specific conditions.

# Groundwater and Ground Gas Monitoring Form



## VISIT 1

Site Name	Whitfield
Client	Halsbury Homes
Job No.	70012378
Date	17/02/2016
Start Time	10:00:00
End Time	12:00:00

Operator	Rae Dunn
Pressure at Start mB	1016
Pressure at End mB	1014
Weather Conditions	Cold, sunny
Temperature oC	

Equipment	Serial No.	Calibrated
Gas Analyser		
Dipmeter		
Interface Probe		
PID		

	Borehole	Response Zone (m)		Gas Flow (l/hr)		Borehole Pressure (mB)	Methane (% v/v)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Other Gasses (ppmV)			Depth to Water (m)	Depth to Base (m)	Thickness of product (mm)	Sampled? (Y/N)
		Top	Bottom	Initial	Steady		Initial	Steady	Initial	Steady	Initial	Steady	PID	H2S	CO				
1	BH01	12.30	15.20	2.7	2.5		0	0	0.3	0.1	19.0	18.5	0	0	10	DRY	14.60		
2	WS105	3.50	5.00	0.9	0.0		0	0	0.9	1.8	18.8	17.4	0	0	0	DRY	5.12		
3	WS106	3.00	5.00													DRY	5.08		
4	WS107	2.00	5.00	0.3	0.1		0	0	0.7	0.6	19.0	18.9	0	0	0	DRY	5.11		
5	WS108	2.80	5.00	0.8	1.0		0	0	2.2	2.3	18.2	18.1	0	0	0	DRY	5.31		
6	WS109	3.00	5.00	1.8	0.9		0	0	1.1	1	18.9	19.0	0	0	0	DRY	5.10		
7	WS110	2.00	5.00	0.3	1.0		0	0	1.1	0.1	19.0	19.9	0	0	0	DRY	5.11		
8	WS111	1.50	5.00	2.7	2.4		0	0	0.7	0.6	19.6	19.1	0	0	0	DRY	5.09		
9	WS112	1.50	5.00	1.8	1.2		0	0	0.8	0.9	19.7	19.3	0	0	0	DRY	5.10		
10	BH03	12.30	15.30	1.6	1.3		0	0	0.7	2.1	18.6	17.1	0	0	0	DRY	15.57		
11																			
12																			
13																			
14																			
15																			
16																			

COMMENTS & GROUND CONDITIONS: WS106 tap concreted shut. No measurements taken.

# Groundwater and Ground Gas Monitoring Form



## VISIT 2

Site Name	Whitfield
Client	Halsbury Homes
Job No.	70012378
Date	22/02/2016
Start Time	11:00:00
End Time	13:50:00

Operator	Ella Niehorster
Pressure at Start mB	994
Pressure at End mB	993
Weather Conditions	Cold, wet
Temperature oC	approx 5

Equipment	Serial No.	Calibrated
Gas Analyser		
Dipmeter		
Interface Probe		
PID		

	Borehole	Response Zone (m)		Gas Flow (l/hr)		Borehole Pressure (mB)	Methane (% v/v)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Other Gasses (ppmV)			Depth to Water (m)	Depth to Base (m)	Thickness of product (mm)	Sampled? (Y/N)
		Top	Bottom	Initial	Steady		Initial	Steady	Initial	Steady	Initial	Steady	PID	H2S	CO				
1	BH01	12.30	15.20	-0.1	-0.3	994.00	0	0	0.2	0	18.8	18.9	0	0	10	DRY	14.70		
2	WS105	3.50	5.00	0.0	0.1	993.00	0	0	1.7	2.1	18.4	17.6	0	0	0	DRY	5.15		
3	WS106	3.00	5.00	-0.1	-0.1	994.00										DRY	5.15		
4	WS107	2.00	5.00													DRY	5.13		
5	WS108	2.80	5.00	-0.1	0.3	993.00	0	0	2	2.1	18.4	18.3	0	0	0	DRY	5.05		
6	WS109	3.00	5.00	-0.1	0.0	994.00	0	0	0	0	20.0	20.0	0	0	0	DRY	5.10		
7	WS110	2.00	5.00	0.1	0.6	993.00	0	0	2	2	18.2	18.1	0	0	0	DRY	5.13		
8	WS111	1.50	5.00	-0.1	2.5	993.00	0	0	2	1.7	18.3	18.1	0	0	0	DRY	5.06		
9	WS112	1.50	5.00	1.2	1.2	993.00	0	0	1.3	0.3	18.8	19.6	0	0	0	DRY	5.10		
10	BH03	12.30	15.30	1.5	1.3	993.00	0	0	0.4	0.3	19.8	19.8	0	0	0	DRY	15.60		
11																			
12																			
13																			
14																			
15																			
16																			

COMMENTS & GROUND CONDITIONS: WS105 and WS107's gas taps were missing. New gas tap used in WS105 - treat as open. WS107 gas tap was concreted shut.

# Groundwater and Ground Gas Monitoring Form



## VISIT 3

Site Name	Whitfield
Client	Halsbury Homes
Job No.	70012378
Date	03/03/2016
Start Time	09:30:00
End Time	11:30:00

Operator	
Pressure at Start mB	993
Pressure at End mB	993
Weather Conditions	cold, sunny, dry
Temperature oC	

Equipment	Serial No.	Calibrated
Gas Analyser		
Dipmeter		
Interface Probe		
PID		

	Borehole	Response Zone (m)		Gas Flow (l/hr)		Borehole Pressure (mB)	Methane (% v/v)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Other Gasses (ppmV)			Depth to Water (m)	Depth to Base (m)	Thickness of product (mm)	Sampled? (Y/N)
		Top	Bottom	Initial	Steady		Initial	Steady	Initial	Steady	Initial	Steady	PID	H2S	CO				
1	BH01	12.30	15.20	0.1	0.6	993.00	0	0	0.2	0.1	19.8	19.3		0	0	DRY	14.80		
2	WS105	3.50	5.00	0.9	-0.6	993.00	0	0	0.8	2.1	19.4	17.8		0	0	DRY	5.10		
3	WS106	3.00	5.00	-0.1	0.7	993.00	0	0	0.9	1.6	19.2	18.4		0	0	DRY	5.10		
4	WS107	2.00	5.00	0.1	1.5	992.00	0	0	0	0	20.0	20.0		0	0	DRY	5.10		
5	WS108	2.80	5.00	0.9	0.9	992.00	0	0	0	0	20.1	20.0		0	0	DRY	5.05		
6	WS109	3.00	5.00	-1.2	0.3	993.00	0	0	0	0	19.7	19.9		0	0	DRY	5.10		
7	WS110	2.00	5.00	0.0	0.3	993.00	0	0	0	0	20.1	20.0		0	0	DRY	5.08		
8	WS111	1.50	5.00	0.6	0.7	993.00	0	0	0	0	20.1	20.0		0	0	DRY	5.08		
9	WS112	1.50	5.00	-0.9	0.9	993.00	0	0	0	0	19.8	19.9		0	0	DRY	5.13		
10	BH03	12.30	15.30	-1.0	-1.0	993.00	0	0	0	0	20.1	20.0		0	0	DRY	14.60		
11																			
12																			
13																			
14																			
15																			
16																			

COMMENTS & GROUND CONDITIONS: WS105 and WS107's bungs were missing, measurements taken treat as gas tap open.



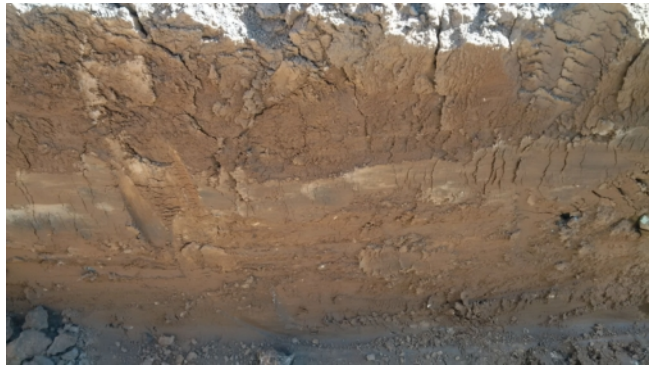
# Appendix J

**SUPPLEMENTARY INVESTIGATIONS**

# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

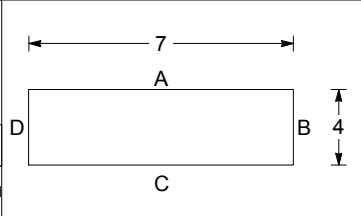


Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	STRATA				
							Depth (Thickness)	Description	Legend	Geology	Install / Backfill
0.30							0.30	Firm friable desiccated light brown grey mottled fine sandy slightly coarse gravelly silty CLAY. Gravel is sub angular flint and chalk fragments. [HEAD DEPOSITS]	X O X	HD	
0.70							0.70	Firm light brown grey mottled fine sandy slightly coarse gravelly silty CLAY. Gravel is sub angular flint and chalk fragments. [HEAD DEPOSITS]	X O X	HD	
1.10			93				1.10	Firm light brown grey mottled fine sandy slightly coarse gravelly slightly cobbly silty CLAY. Gravel is sub angular flint and chalk fragments. [HEAD DEPOSITS]	X O X	HD	

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site.  
Plot 18

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



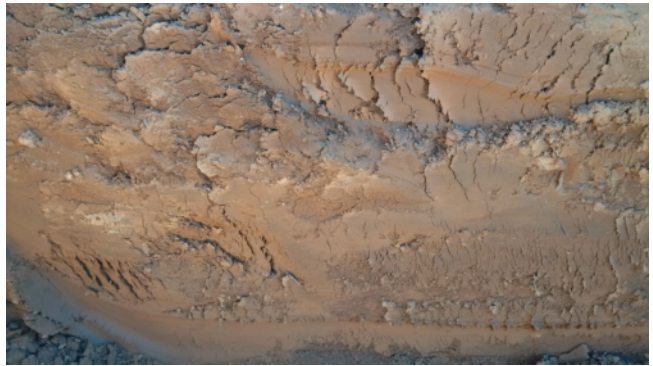
Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 19-07-16 19-07-16	Trial Hole No. <b>PBT001</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 10/8/16

# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

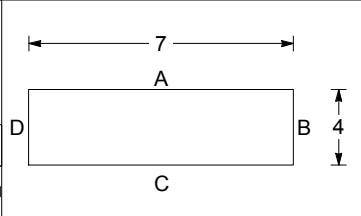


Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.40)	Firm friable slightly desiccated light brown fine sandy slightly fine gravelly silty CLAY. Gravel is sub angular flint fragments. [HEAD DEPOSITS]	[Symbol]	HD	[Symbol]
							0.40				
							(0.70)	Firm friable light brown fine sandy slightly silty CLAY. [HEAD DEPOSITS]	[Symbol]	HD	[Symbol]
							1.10	1.00 - 1.10 m bgl Becomes slightly gravelly with gravel of sub angular flint fragments.	[Symbol]		[Symbol]
			78								

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site.  
Plot 14/15

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 19-07-16 19-07-16	Trial Hole No. <b>PBT002</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 10/8/16

# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378



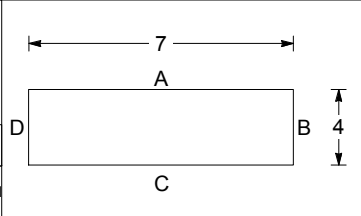
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	STRATA				
							Depth (Thickness)	Description	Legend	Geology	Install / Backfill
0.30							(0.30)	Firm desiccated friable brown fine sandy silty CLAY. Sand content varies from slightly to very sandy. [HEAD DEPOSITS]	[Symbol]	HD	[Symbol]
0.80							(0.80)	Firm friable light brown to light yellow very fine sandy silty CLAY with lenses of 50mm light yellow fine sand. [HEAD DEPOSITS]	[Symbol]	HD	[Symbol]
1.30			71				1.10				
			61				1.30	Firm yellow brown fine sandy CLAY. Small 300mm by 300mm area of organic grey soil and grass. (May have fallen in during excavation). [HEAD DEPOSITS]	[Symbol]	HD	[Symbol]

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.3m depth. Set out and backfilled by Contractor on site.  
Plot 10

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

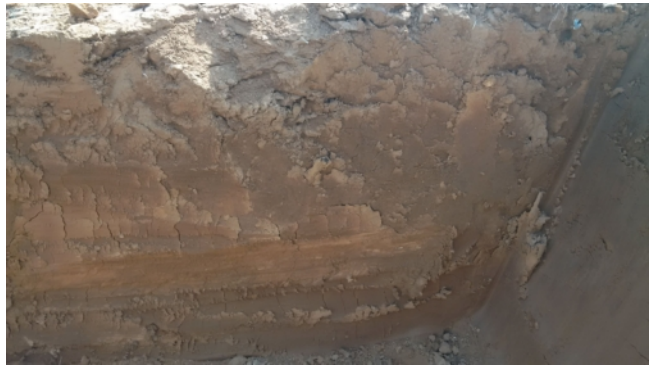


Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 19-07-16 19-07-16	Trial Hole No. <b>PBT003</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	



# TRIAL PIT LOG

Project: Whitfield Phase 1  
Job No: 70012378

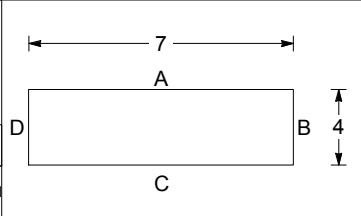


Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.30)	Firm desiccated friable dark grey fine sandy silty CLAY. [TOPSOIL]		TS	
							0.30				
							(0.80)	Stiff friable light brown to brown fine sandy silty CLAY with sub angular flint nodules and dark grey organic streaking. [HEAD DEPOSITS]		HD	
			82				0.70 - 0.80 m bgl	Very fine sandy CLAY			
							1.10				

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site. Plot 41

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 20-07-16 20-07-16	Trial Hole No. <b>PBT005</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ WSPTEMPLATE1.03.GDT 10/8/16

# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

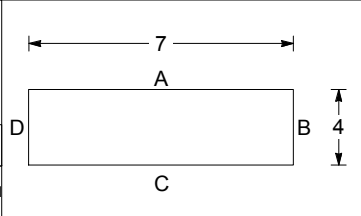


Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
								Firm friable reddish brown fine sandy silty CLAY with sub angular flint nodules and dark grey organic streaking. [HEAD DEPOSITS]			
							(1.10)	0.40 m bgl Becomes sandy.		HD	
								0.70 m bgl Becomes dark brown.			
							1.10	0.80 - 1.10 m bgl Becoming slightly sandy with dark brown organic streaks.			

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site.  
Plot 44

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 20-07-16 20-07-16	Trial Hole No. <b>PBT006</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ WSPTEMPLATE1.03.GDT 10/8/16



# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.30)	Soft desiccated friable dark grey fine sandy silty CLAY. [TOPSOIL]		TS	
							0.30				
							0.50	Stiff friable light brown to brown fine sandy silty CLAY with sub angular flint nodules and dark grey organic streaking. [HEAD DEPOSITS]		HD	
							0.60	Medium density light brown yellow fine silty SAND. [HEAD DEPOSITS]		HD	
							(0.50)	Stiff friable light brown fine slightly sandy silty laminated CLAY with sub angular flint nodules. [HEAD DEPOSITS]		HD	
			79				1.10	0.80 m bgl. Becoming light brown to yellow.			

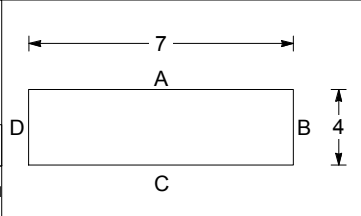


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.0m depth. Set out and backfilled by Contractor on site. Plot 48

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 20-07-16 20-07-16	Trial Hole No. <b>PBT007</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	



# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.20	Soft desiccated friable dark grey fine sandy silty CLAY. [TOPSOIL]		TS	
			82				(0.90)	Stiff friable light brown to brown fine sandy silty CLAY with sub angular flint nodules and dark grey organic streaking. [HEAD DEPOSITS]		HD	
							0.80 m bgl	Becomes brown.			
							1.10	1.00 - 1.10 m bgl	Becomes dark brown.		

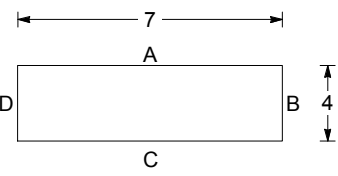


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECEN.GPJ WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site.  
Plot 51

**Shoring/Support:**  
**Stability:** Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 20-07-16 20-07-16	Trial Hole No. <b>PBT008</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.20	Soft desiccated friable dark grey fine sandy silty CLAY with roots and nodules of moderate sub angular flint and chalk. [TOPSOIL]		TS	
							(0.90)	0.60 m bgl No longer desiccated		HD	
							0.80 m bgl Becoming stiff.				
			94				1.10				

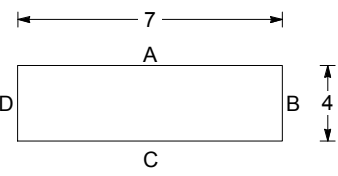


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site.  
Plot 34

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



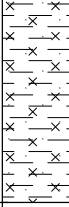
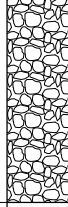


Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 20-07-16 20-07-16	Trial Hole No. <b>PBT009</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

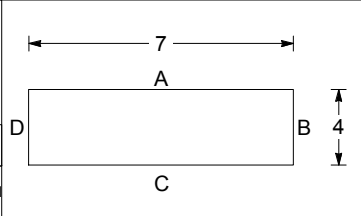
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.20	Soft desiccated friable dark grey fine sandy silty CLAY with roots and nodules of medium sub angular flint and chalk. [TOPSOIL]		TS	
			83				(0.90)	Firm friable reddish brown very fine sandy silty CLAY with coarse sub angular flint nodules. [HEAD DEPOSITS] 0.30 - 0.40 m bgl 100mm thick lense of light yellow fine sand.		HD	
							1.10	0.90 - 1.10 m bgl Becomes sandy and dark reddish brown.			



**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site.  
 Plot 53

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	7.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	4.00m	Ground Level (m AOD)		Co-Ordinates (NGR)	Date	20-07-16 20-07-16	Trial Hole No.	<b>PBT010</b>
Orientation	degrees from north	Method/Plant Used	13.5 Ton Tracked Excavator	Contractor	Scale	Dwyer 1:33.3		

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ WSPTEMPLATE1.03.GDT 10/8/16

# TRIAL PIT LOG

Project: Whitfield Phase 1  
Job No: 70012378



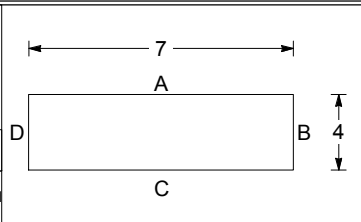
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	STRATA				
							Depth (Thickness)	Description	Legend	Geology	Install / Backfill
0.00 - 0.30							(0.30)	Soft desiccated friable dark grey fine sandy silty CLAY with roots and nodules of medium sub angular flint and chalk. [TOPSOIL]		TS	
0.30 - 0.60							(0.30)	Firm friable reddish brown very fine sandy silty CLAY with sub angular flint nodules and occasional roots. [HEAD DEPOSITS]		HD	
0.60 - 1.10							(0.50)	Stiff friable dark reddish brown very fine sandy silty CLAY with sub angular flint and chalk nodules. [HEAD DEPOSITS]		HD	
1.10 - 1.10			81				1.10				

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site.  
Plot 38

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 20-07-16 20-07-16	Trial Hole No. <b>PBT011</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.20	Soft desiccated friable dark grey fine sandy silty CLAY with roots and nodules of medium sub angular flint and chalk. [TOPSOIL]		TS	
			78				(0.90)	Firm friable reddish brown slightly desiccated very fine sandy silty CLAY with coarse sub angular moderate flint and chalk nodules. 1.1mbgl Becoming sandy. [HEAD DEPOSITS]		HD	
							1.10	0.50 m bgl No nodules below this depth.			

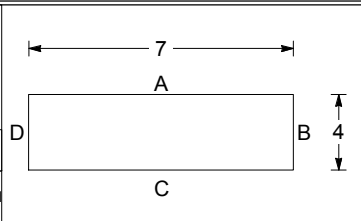


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.2m depth. Set out and backfilled by Contractor on site. Plot 55

**Shoring/Support:**  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 21-07-16 21-07-16	Trial Hole No. <b>PBT012</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.10	Soft desiccated friable dark grey fine sandy silty CLAY with roots and nodules of medium sub angular flint and chalk. [TOPSOIL]		TS	
							0.30	Firm friable dark greyish brown slightly desiccated very fine sandy silty CLAY with coarse sub angular medium flint and chalk nodules. [HEAD DEPOSITS]		HD	
							(0.80)	Stiff reddish brown very fine sandy silty CLAY. Sub angular coarse chalk and flint gravel nodules. [HEAD DEPOSITS]		HD	
			74				1.10				

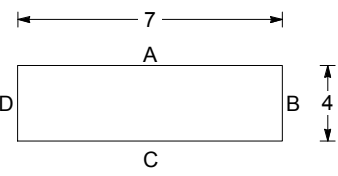


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. No plate load test completed. Set out and backfilled by Contractor on site.  
Plot 57

**Shoring/Support:**  
**Stability:** Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 21-07-16 21-07-16	Trial Hole No. <b>PBT013</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	



# TRIAL PIT LOG

**Project**  
Whitfield Phase 1

**Job No**  
70012378



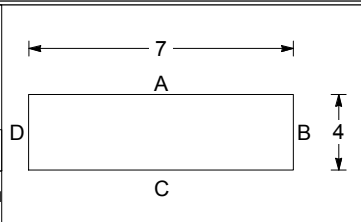
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.30)	Soft desiccated friable dark grey fine sandy silty CLAY with roots and nodules of medium sub angular flint and chalk. [TOPSOIL]		TS	
							0.30				
							(0.90)	Firm friable reddish brown very fine sandy silty CLAY with sub angular flint nodules and occasional roots. [HEAD DEPOSITS] 0.40 - 0.50 m bgl Slightly gravelly (moderate subangular chalk and flint). 0.70 m bgl Becomes dark reddish brown.		HD	
			81				1.20				

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 10/8/16

**General Remarks**  
No groundwater encountered. 600mm plate bearing test completed at 1.2m depth. Set out and backfilled by Contractor on site.  
Plot 06

Shoring/Support:  
Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



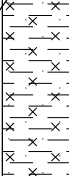
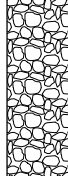


Length 7.00m	Logged By DL	Client Halsbury Homes		Sheet 1 of 1
Width 4.00m	Ground Level (m AOD)	Co-Ordinates (NGR)	Date 21-07-16 21-07-16	Trial Hole No. <b>PBT014</b>
Orientation degrees from north	Method/Plant Used 13.5 Ton Tracked Excavator	Contractor Dwyer	Scale 1:33.3	

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

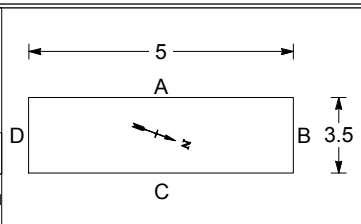
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.20	Firm friable dark brown very fine sandy slightly gravelly silty CLAY with rootlets. Gravel of fine to coarse sub angular to sub rounded flint, chalk and brick fragments. [REWORKED TOPSOIL]		TS	
			118				(0.80)	Stiff red brown friable very sandy silty CLAY. Contains inclusions of fine to coarse sub angular to sub rounded flint and chalk. [HEAD DEPOSITS]		HD	
							1.00				



**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.0m depth. Set out and backfilled by Contractor on site. Plot 28

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631167 N 145177	Date	18-10-16	Trial Hole No. <b>PBT 101</b>
Orientation	70 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	



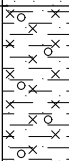
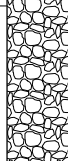
08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

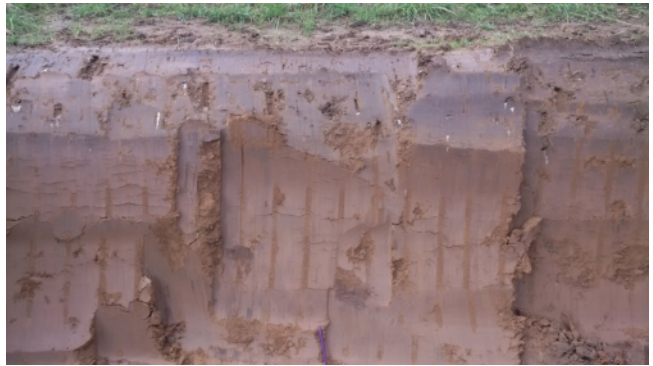


# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.30)	Firm friable dark brown very fine sandy slightly gravelly silty CLAY with rootlets. Gravel of fine to coarse sub angular to sub rounded flint, chalk and brick fragments. [REWORKED TOPSOIL]		TS	
			94				(0.70)	Firm to stiff reddish brown friable very sandy slightly gravelly silty CLAY. Gravel of fine to coarse sub angular to sub rounded flint and chalk. [HEAD DEPOSITS]		HD	
							1.00				

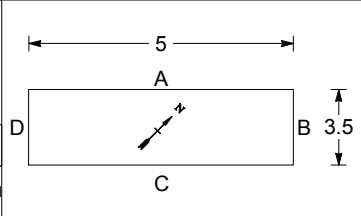


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. Set out and backfilled by Contractor on site.  
 Plot 01

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



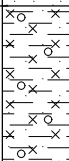
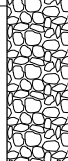


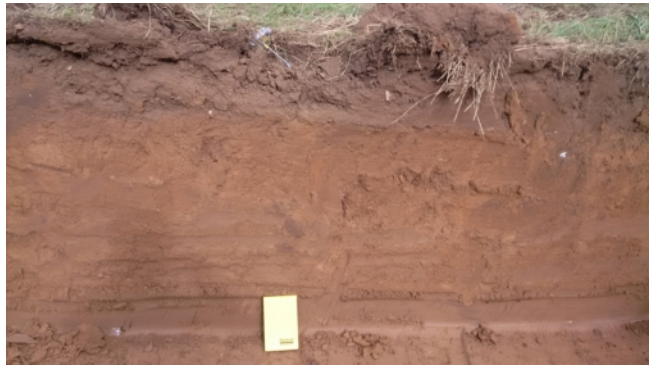
Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631152 N 145195	Date	18-10-16	Trial Hole No. <b>PBT 102</b>
Orientation	135 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.30)	Firm friable dark brown grey very fine sandy slightly gravelly silty CLAY with rootlets. Gravel of fine to coarse sub angular to sub rounded flint, chalk, pottery and brick fragments. [REWORKED TOPSOIL]		TS	
			94				(0.70)	firm to stiff reddish brown friable very sandy slightly gravelly silty CLAY. Gravel of fine to coarse sub angular to sub rounded flint and chalk. [HEAD DEPOSITS]		HD	
							1.00				

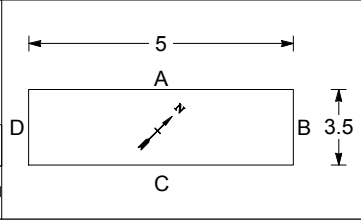


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16






**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.0m depth. Set out and backfilled by Contractor on site.  
 Plot 02

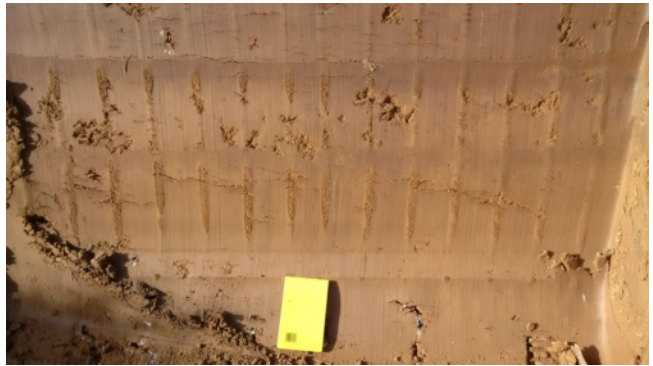
**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631167 N 145209	Date	18-10-16	Trial Hole No. <b>PBT 103</b>
Orientation	135 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	

 WSP Parsons Brinckerhoff The Chase, John Tate Rd, Hertford, SG13 7NN Telephone: 01992 526000		<h1 style="margin: 0;">TRIAL PIT LOG</h1>				Depth	Type	PID (ppmV)	HSV (kN/m <sup>2</sup> )	P Pen (kN/m <sup>2</sup> )	Water	Elev. (mAOD)	Depth (Thick-ness)	STRATA					
Project		Job No											Description	Legend	Geology	Install / Backfill			
Whitfield Phase 1		70012378											(0.30)	Firm friable dark grey brown very fine sandy slightly coarse gravelly silty CLAY with rootlets. Gravel is sub angular to sub rounded chalk, flint and brick. [REWORKED TOPSOIL]		TS			
													0.30						
													(1.00)	Firm to stiff reddish brown friable very fine sandy slightly gravelly silty CLAY. Gravel of fine to coarse sub angular to sub rounded flint and chalk. Some organic smearing. [HEAD DEPOSITS]		HD			
													1.30						

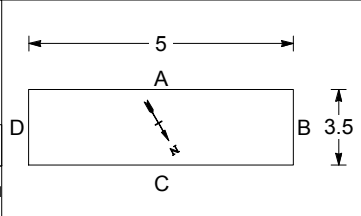


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.3m depth. Set out and backfilled by Contractor on site. Plot 24/25

Shoring/Support:  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.









Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631187 N 145210	Date	18-10-16	Trial Hole No. <b>PBT 104</b>
Orientation	30 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

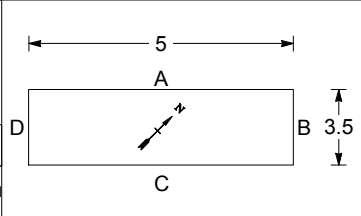
Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.30)	Firm friable brown very fine sandy slightly coarse gravelly silty CLAY with rootlets. Gravel is sub angular to sub rounded chalk, flint and brick. [REWORKED TOPSOIL]		TS	
							0.30				
							0.50	Firm to stiff light reddish brown friable very fine sandy silty CLAY. [HEAD DEPOSITS]		HD	
							(0.70)				
							1.20	Firm to stiff reddish brown friable very fine sandy slightly gravelly silty CLAY. Gravel of fine to coarse sub angular to sub rounded flint and chalk. [HEAD DEPOSITS]		HD	



**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.2m depth. Set out and backfilled by Contractor on site. Plot 04

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.





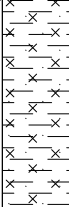
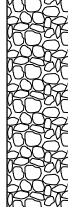
Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631193 N 145233	Date	18-10-16	Trial Hole No. <b>PBT 105</b>
Orientation	135 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.25)	Firm friable brown very fine to medium sandy slightly coarse gravelly slightly cobblely silty CLAY with rootlets. Gravel and cobbles are sub angular to sub rounded chalk, flint, pottery and brick. [REWORKED TOPSOIL]		TS	
							0.25				
							(0.95)	Firm to stiff reddish brown friable very fine sandy silty CLAY. Contains rare gravel of medium sub angular to sub rounded chalk and flint. [HEAD DEPOSITS]		HD	
							1.20	0.50 m bgl Becoming slightly gravelly. Gravel of fine to coarse sub angular to sub rounded flint and chalk.			

77

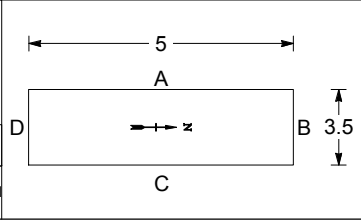


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ\_WSPTEMPLATE1.03.GDT 1/11/16







**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.2m depth. Set out and backfilled by Contractor on site.  
 Plot 61

Shoring/Support:  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631280 N 145316	Date	19-10-16	Trial Hole No. <b>PBT 106</b>
Orientation	90 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	

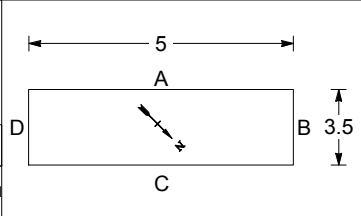
 WSP Parsons Brinckerhoff The Chase, John Tate Rd, Hertford, SG13 7NN Telephone: 01992 526000		<h1 style="margin: 0;">TRIAL PIT LOG</h1>				Depth	Type	PID (ppmV)	HSV (kN/m <sup>2</sup> )	P Pen (kN/m <sup>2</sup> )	Water	Elev. (mAOD)	Depth (Thick-ness)	STRATA													
Project Whitfield Phase 1		Job No 70012378		Description												Legend	Geology	Install / Backfill									
												0.25	Firm friable brown very fine sandy slightly coarse gravelly silty CLAY with rootlets. Gravel is sub angular to sub rounded chalk, flint and brick. [REWORKED TOPSOIL]													TS	
												0.25 - 0.95	Firm to stiff dark orange brown friable very fine sandy slightly gravelly silty CLAY with black organic streaking. Gravel of fine to coarse sub angular to sub rounded flint and chalk [HEAD DEPOSITS]													HD	
												0.95 - 1.20	0.65 - 1.20 m bgl Smearing of pit walls increasing.														

08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.2m depth. Set out and backfilled by Contractor on site. Plot 59

Shoring/Support:  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length  
5.00m

Width  
3.50m

Orientation  
45 degrees from north

Logged By  
DL

Ground Level (m AOD)

Method/Plant Used  
14 Ton Tracked Excavator

Client  
Halsbury Homes

Co-Ordinates (NGR)  
E 631255 N 145300

Date  
19-10-16  
19-10-16

Contractor  
Dwyer

Scale  
1:33.3

Sheet  
1 of 1



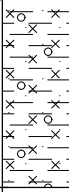
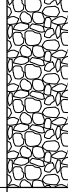
Trial Hole No.  
**PBT 107**



# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.25) - 0.25	Firm friable grey brown very fine sandy slightly coarse gravelly silty CLAY with rootlets. Gravel is sub angular to sub rounded chalk, flint and brick. [REWORKED TOPSOIL]		TS	
			106				(0.80) - 1.10	Stiff to very stiff dark orange brown friable very fine sandy slightly gravelly silty CLAY with black organic streaking. Gravel of fine to coarse sub angular to sub rounded flint and chalk. [HEAD DEPOSITS] 0.50 - 0.90 m bgl! Lens within west of pit of structureless CHALK composed of uncompact cream to brown slightly coarse gravelly SILT with occasional cobbles. Gravel and cobbles are sub angular to sub rounded flint and very weak low density chalk with occasional black specks. Locally light brown with traces of brown sandy clay [Grade Dm].		HD	

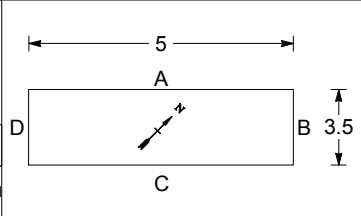


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site. Plot 63

Shoring/Support:  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.








Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631296 N 145329	Date	19-10-16	Trial Hole No. <b>PBT 108</b>
Orientation	135 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA				
								Description	Legend	Geology	Install / Backfill	
							(0.30)	Friable grey brown slightly coarse gravelly silty very fine sand with rootlets. Gravel is sub angular to sub rounded chalk, flint and brick. [REWORKED TOPSOIL]		TS		
							0.30					
							(0.90)	Stiff to very stiff reddish brown friable very fine sandy silty CLAY. [HEAD DEPOSITS]		HD		
							0.55 m bgl	Becoming dark reddish brown and sandy.				
							1.20	0.85 m bgl	Becoming coarse gravelly slightly sandy clay. Gravel is sub angular to sub rounded chalk and flint and appears in lenses. Rare cobbles of sub angular to sub rounded flint.			

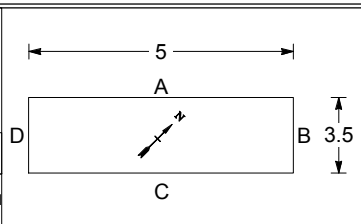


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_GPJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site. Plot 66

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.









Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631316 N 145348	Date	19-10-16	Trial Hole No.
Orientation	135 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	
								<b>PBT 109</b>



# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.20	Firm friable grey brown very fine sandy slightly coarse gravelly silty CLAY with rootlets. Gravel is sub angular to sub rounded chalk, flint and brick. [REWORKED TOPSOIL]		TS	
							(0.80)	Stiff to very stiff reddish brown friable very fine sandy slightly silty CLAY. Some organic smearing. [HEAD DEPOSITS]		HD	
			117				1.00	0.90 m bgl Becoming slightly gravelly. Gravel of sub angular to sub rounded flint and chalk			

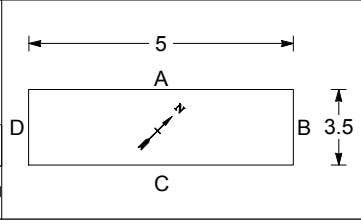


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.1m depth. Set out and backfilled by Contractor on site. Plot 85

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



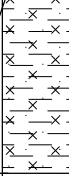
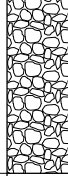


Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631334 N 145366	Date	19-10-16	Trial Hole No.
Orientation	135 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	
								<b>PBT 110</b>

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.10	Stiff reddish brown friable very fine sandy slightly gravelly silty CLAY. Contains inclusions of fine to coarse sub angular to sub rounded flint, chalk and brick fragments. [MADE GROUND]		MG	
							(0.80)	Firm to stiff reddish brown friable very fine sandy silty CLAY. [HEAD DEPOSITS]		HD	
			82				0.90				

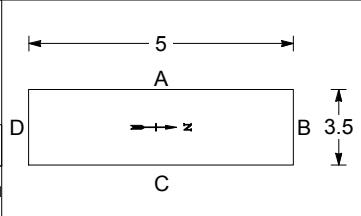


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_GPJ WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 0.9m depth. Set out and backfilled by Contractor on site.  
 Plot 92

**Shoring/Support:**  
 Stability: Excavation sides stable.



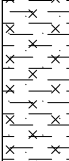
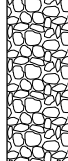
Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631365 N 145360	Date	19-10-16	Trial Hole No.
Orientation	90 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	
								<b>PBT 111</b>

# TRIAL PIT LOG

Project: Whitfield Phase 1  
 Job No: 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
0.10								Stiff reddish brown friable very fine sandy slightly gravelly silty CLAY. Contains inclusions of fine to coarse sub angular to sub rounded flint, chalk and brick fragments. [MADE GROUND]		MG	
(0.90)								Firm to stiff reddish brown friable very fine sandy silty CLAY. Contains rare inclusions of fine to medium sub angular to sub rounded chalk and flint gravel. [HEAD DEPOSITS]		HD	
1.00			100								

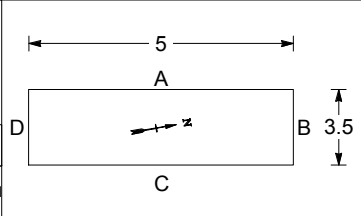


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.0m depth. Set out and backfilled by Contractor on site. Plot 89

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.







Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631363 N 145388	Date	20-10-16	Trial Hole No.
Orientation	100 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	
								<b>PBT 112</b>

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							0.15	Firm friable light brown very fine sandy slightly coarse gravelly silty CLAY with rootlets. Gravel is sub angular to sub rounded chalk, flint and brick. [REWORKED TOPSOIL]		TS	
			108				(0.85)	Stiff to very stiff reddish brown friable very fine sandy slightly silty CLAY. [HEAD DEPOSITS] 0.35 m bgl Becoming slightly coarse gravelly. Gravel of sub angular to sub rounded chalk and flint.		HD	
							1.00				

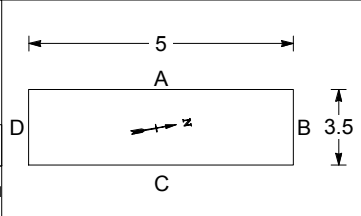


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.0m depth. Set out and backfilled by Contractor on site. Plot 88

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



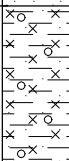
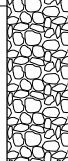


Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631364 N 145421	Date	20-10-16	Trial Hole No. <b>PBT 113</b>
Orientation	100 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m <sup>2</sup> )	P Pen (kN/m <sup>2</sup> )	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
							(0.30)	Stiff grey brown friable very fine sandy slightly gravelly silty CLAY with rootlets. Contains rare inclusions of fine to course sub angular to sub rounded flint, chalk and brick gravel. [REWORKED TOPSOIL]		TS	
			109				(0.70)	Very stiff reddish brown friable very fine sandy silty CLAY. Contains fine to medium gravel inclusions of sub angular to sub rounded chalk and flint. [HEAD DEPOSITS] 0.50 - 0.80 Lens within west of pit of structureless CHALK composed of uncompact cream to brown slightly coarse gravelly SILT with occasional cobbles. Gravel and cobbles are sub angular to sub rounded flint and very weak low density chalk with occasional black specks. Locally light brown with traces of brown sandy clay [Grade Dm].		HD	
							1.00				

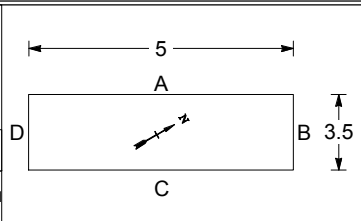


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_GPJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 1.0m depth. Set out and backfilled by Contractor on site. Trial pit dug 6m to the south west of set out point to avoid spoil heap. Plot 83

**Shoring/Support:**  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.

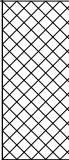
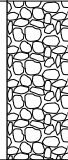


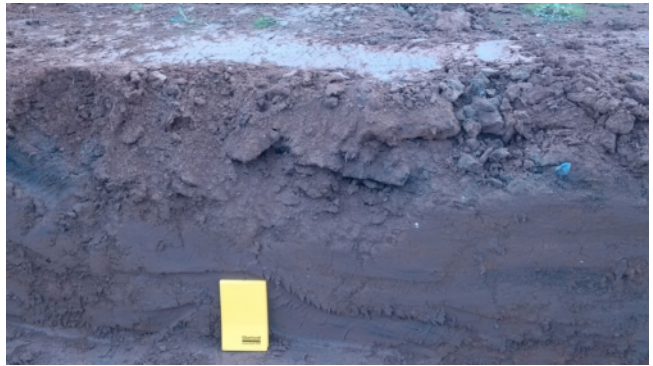
Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631322 N 145325	Date	20-10-16	Trial Hole No.
Orientation	120 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	
								<b>PBT 114</b>

# TRIAL PIT LOG

**Project**  
 Whitfield Phase 1

**Job No**  
 70012378

Depth	Type	PID (ppmV)	HSV (kN/m2)	P Pen (kN/m2)	Water	Elev. (mAOD)	Depth (Thickness)	STRATA			
								Description	Legend	Geology	Install / Backfill
			130				(0.70)	Stiff reddish brown friable very fine sandy slightly gravelly silty CLAY. Contains darker patches (0.1-0.15m diameter) of darker organic clay with rootlets. Gravel of coarse sub angular to sub rounded flint. [REWORKED HEAD]		MG	
			68				0.50 m bgl	Becoming stiff.			
			99				0.60 m bgl	Becoming very stiff			

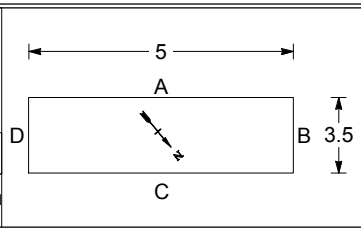


08 WSP TP LOG LS 1 PHOTO 70012378\_16\_02\_15\_WHITFIELD\_GINT\_ECJ\_GPJ\_WSPTEMPLATE1.03.GDT 1/11/16

**General Remarks**  
 No groundwater encountered. 600mm plate bearing test completed at 0.7m depth. Set out and backfilled by Contractor on site.  
 Road 5

Shoring/Support:  
 Stability: Excavation sides stable.

Notes: All dimensions in metres. Logs should be read in accordance with the provided Key. Descriptions are based on visual and manual identification.



Length	5.00m	Logged By	DL	Client	Halsbury Homes		Sheet	1 of 1
Width	3.50m	Ground Level (m AOD)		Co-Ordinates (NGR)	E 631377 N 145342	Date	20-10-16 20-10-16	Trial Hole No. <b>PBT 115</b>
Orientation	40 degrees from north	Method/Plant Used	14 Ton Tracked Excavator	Contractor	Dwyer	Scale	1:33.3	



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover Kent CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Tim Rust**

**Report No.: UXB0332746**

Page 1 of 4 Pages

**Job No.: 51023757/M1**

Sample Information			
Test Locations:	Position 501	Lab Reference:	M 24004784
Material Type:	Brown Clay	Temperature (°C):	16
Client Reference:	1	Environmental Conditions:	Sunny

### Test Data

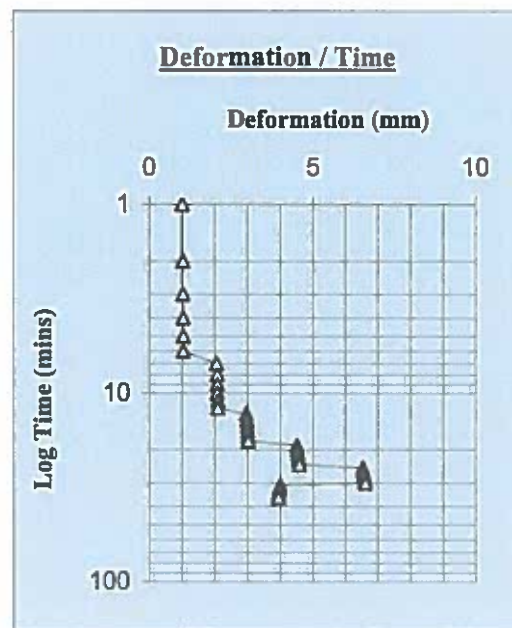
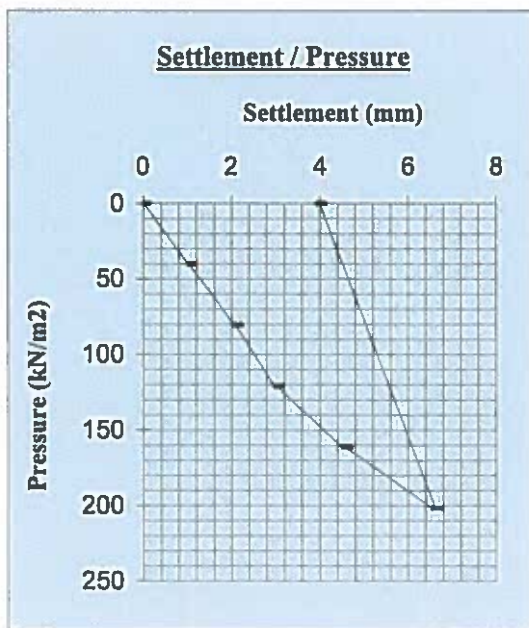
Loading procedure : Incremental  
 In-situ moisture content (%) : 24  
 Test depth (m) : 1000mm Below Ground Level

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 10.3  
 Date Tested: **16 May 2016**

### Test Results

Maximum Applied Pressure: **201.60 kN/m<sup>2</sup>**

Maximum Deformation: **6.61mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 17 / May / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 : 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover Kent CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Tim Rust**

**Report No.: UXB0332746**

Page 2 of 4 Pages

**Job No.: 51023757/M1**

Sample Information			
Test Locations:	Position 502	Lab Reference:	M 24004785
Material Type:	Brown Clay	Temperature (°C):	16
Client Reference:	2	Environmental Conditions:	Sunny

### Test Data

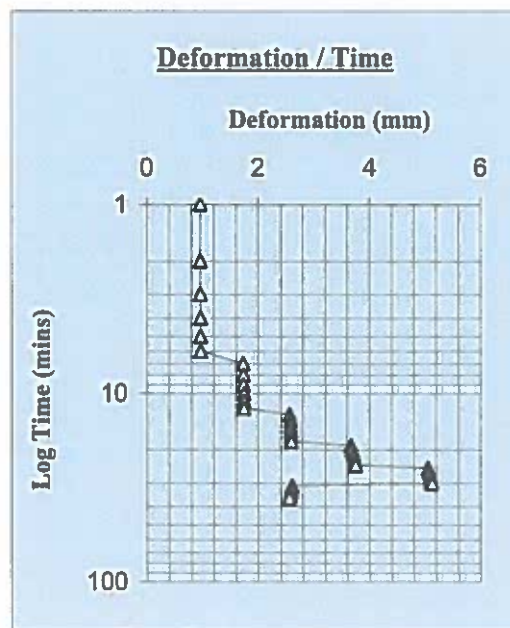
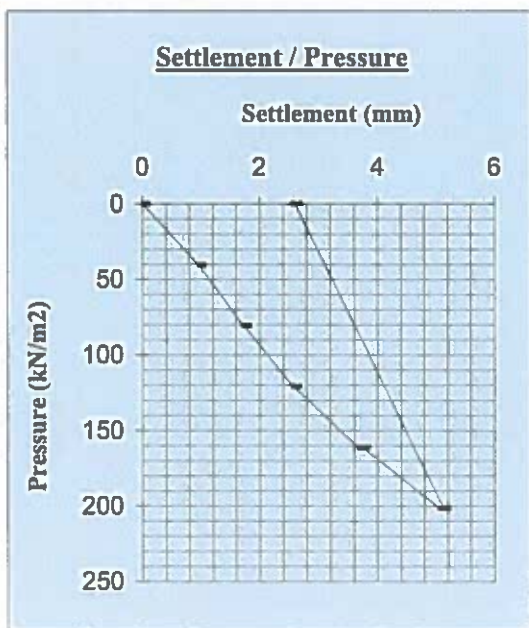
Loading procedure : Incremental  
 In-situ moisture content (%) : 22  
 Test depth (m) : 1000mm Below Ground Level

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 10.3  
 Date Tested: **16 May 2016**

### Test Results

Maximum Applied Pressure: **201.60 kN/m<sup>2</sup>**

Maximum Deformation: **5.12mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 17 / May / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 : 4.1 and  
 moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover Kent CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Tim Rust**

**Report No.: UXB0332746**

Page 3 of 4 Pages

**Job No.: 51023757/M1**

Sample Information			
Test Locations:	Position 503	Lab Reference:	M 24004786
Material Type:	Brown Clay	Temperature (°C):	16
Client Reference:	3	Environmental Conditions:	Sunny

### Test Data

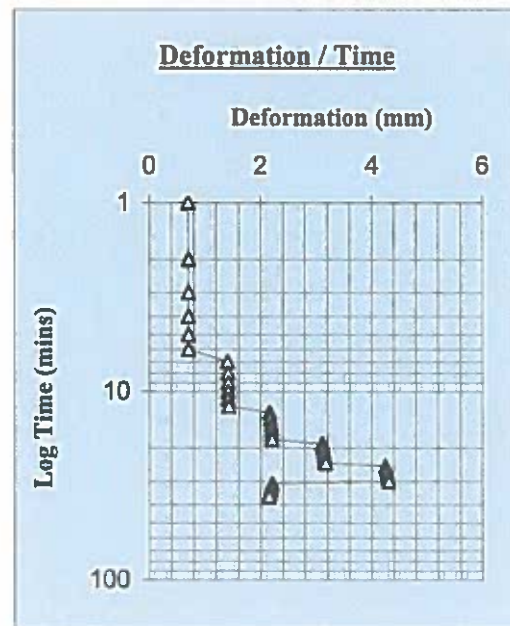
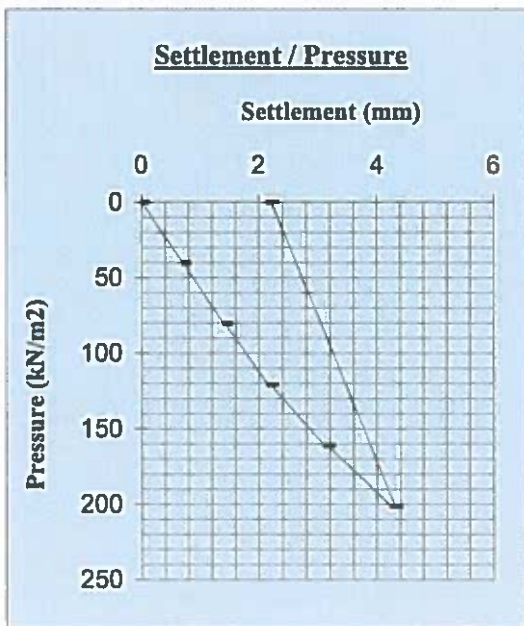
Loading procedure : Incremental  
 In-situ moisture content (%) : 21  
 Test depth (m) : 1000mm Below Ground Level

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 10.3  
 Date Tested: **16 May 2016**

### Test Results

Maximum Applied Pressure: **201.60 kN/m<sup>2</sup>**

Maximum Deformation: **4.31mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattuc  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 17 / May / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 : 4.1 and  
 moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover Kent CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Tim Rust**

**Report No.: UXB0332746**

Page 4 of 4 Pages

**Job No.: 51023757/M1**

Sample Information			
Test Locations:	Position 504	Lab Reference:	M 24004787
Material Type:	Brown Clay	Temperature (°C):	16
Client Reference:	4	Environmental Conditions:	Sunny

### Test Data

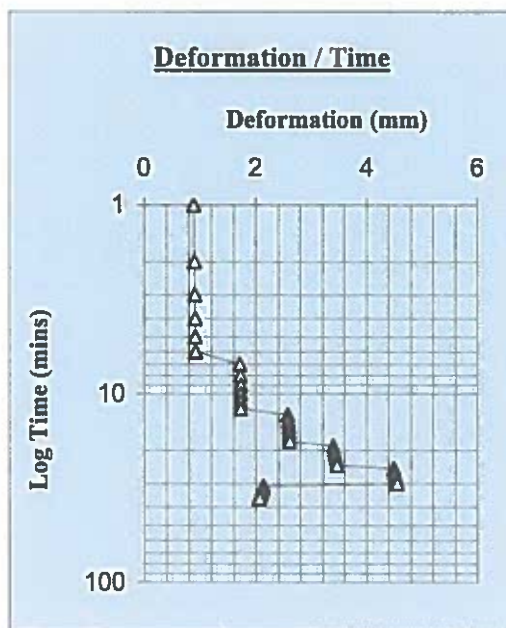
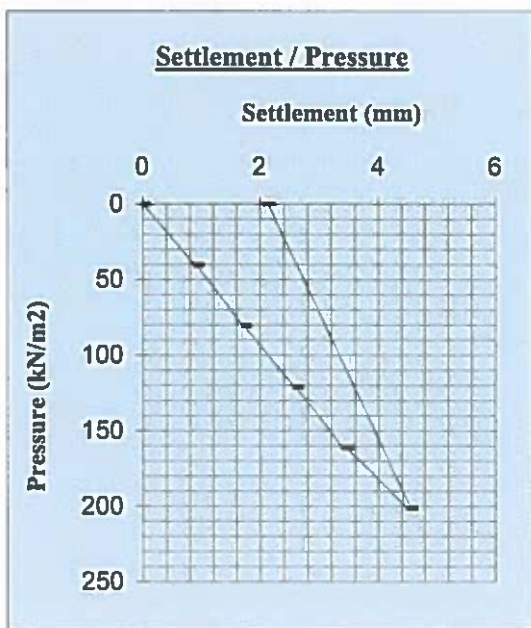
Loading procedure : Incremental  
 In-situ moisture content (%) : 28  
 Test depth (m) : 500mm Below Ground Level

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 10.3  
 Date Tested: **16 May 2016**

### Test Results

Maximum Applied Pressure: **201.60 kN/m<sup>2</sup>**

Maximum Deformation: **4.55mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 17 / May / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 : 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLTI ver 4 02/06

## Equivalent CBR Plate Bearing Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover Kent CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Tim Rust**

**Report No.: UXB0332746**

Page 1 of 1 Pages

**Job No.: 51023757/M1**

Sample Information			
Test Locations:	Position 504	Lab Reference:	M 24004787
Material Type:	Brown Clay	Temperature (°C):	16
Client Reference:	4	Environmental Conditions :	Sunny

### Test Data

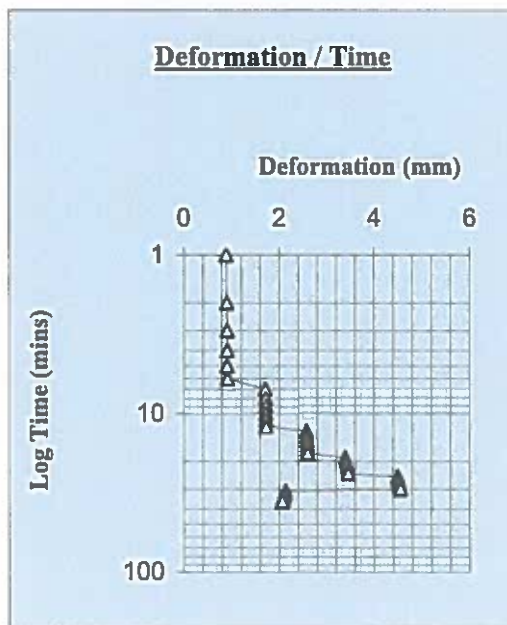
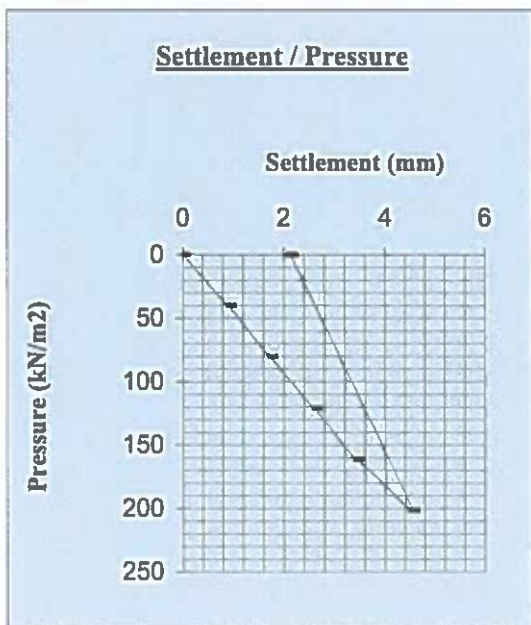
Loading procedure : Continuous  
 In-situ moisture content (%) : 28  
 Test depth (m) : 500mm Below Ground Level

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 10.3  
 Date Tested: **16 May 2016**

### Test Results

Maximum Applied Pressure: **201.60 kN/m<sup>2</sup>**

Maximum Deformation: **4.55mm**



Note : N/A=Not Applicable N/G=Not Given

**Equivalent CBR interpreted from MSR : 4.7 %**  
**Modulus of Subgrade Reaction (MSR) : 37.0 MN/m<sup>2</sup>/m**

(MSR and CBR calculated from equations set out in DMRB Volume 7)

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager

Remarks: Tests were originally conducted as Increments. At clients request converted to CBR's. This may give incorrect results.

Distribution :

For and on behalf of ESG

Date Checked & Issued : 18 / May / 16

Certified that testing was to ESG In-House Procedure which is based on  
 SIIW Interim Advice Note 73/06 and moisture content was to B.S. 1377  
 Part 2: 3.2: 1990



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0339926**

Page 1 of 3 Pages

**Job No.: 51023757/M2**

Sample Information	
Test Locations:	1
Material Type:	Brown, Silty Sandy, Gravelly Clay
Client Reference:	1
Lab Reference:	M 24090887
Temperature (°C):	34 - 28.5
Environmental Conditions:	Hot

### Test Data

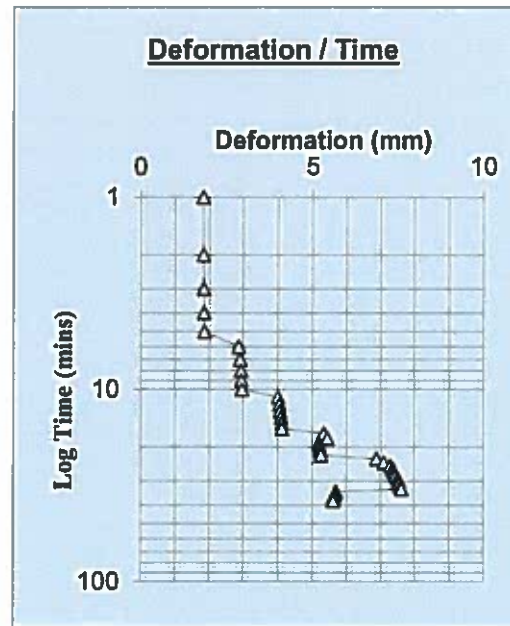
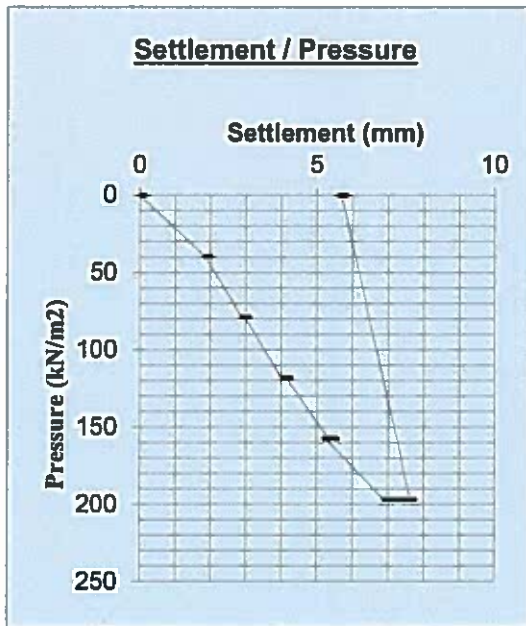
Loading procedure : Incremental  
 In-situ moisture content (%) : 19  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **19th July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **7.62mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

[ ] Roger Rattue

[ ~~] Mohamed Jaffer - Section Manager~~

[ ] Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 27 / Jul / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

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Environmental Scientifics Group Limited  
 Reg office: ESG House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ  
 Incorporated in England: 02880501

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0339926**

Page 2 of 3 Pages

**Job No.: 51023757/M2**

Sample Information			
Test Locations:	2	Lab Reference:	M 24090888
Material Type:	Brown, Silty, Sandy, Gravelly Clay	Temperature (°C):	34 - 28.5
Client Reference:	2	Environmental Conditions:	Hot

### Test Data

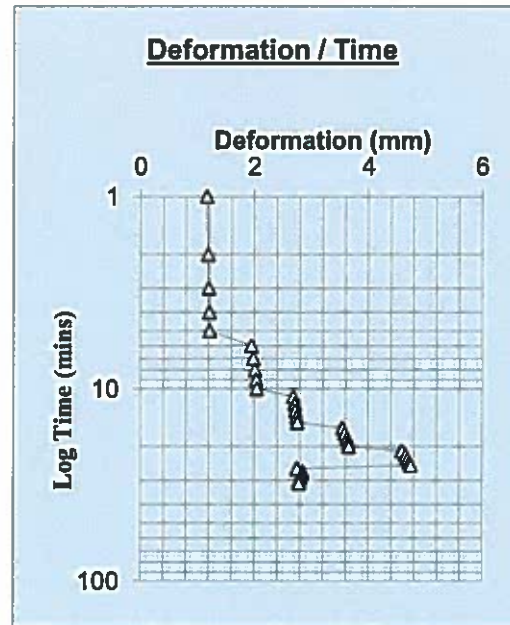
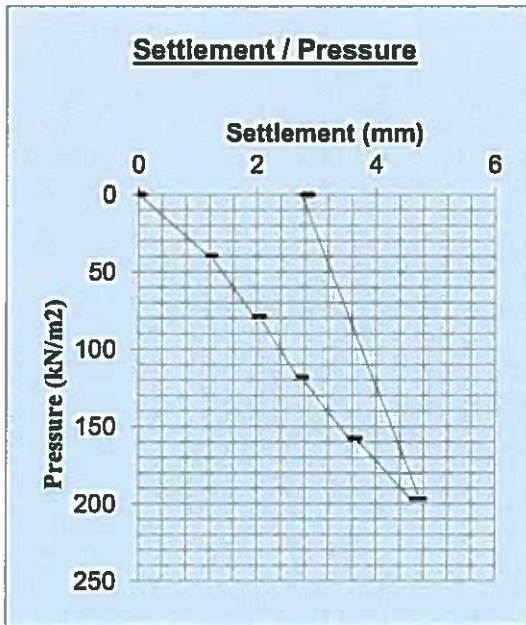
Loading procedure : Incremental  
 In-situ moisture content (%) : 17  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **19th July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **4.74mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 27 / Jul / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation.  
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Environmental Scientifics Group Limited  
 Reg office: ESG House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ  
 Incorporated in England: 02880501

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0339926**

Page 3 of 3 Pages

**Job No.: 51023757/M2**

Sample Information			
Test Locations:	3	Lab Reference:	M 24090889
Material Type:	Brown, Silty, Sandy, Gravelly, Clay	Temperature (°C):	34 - 28.5
Client Reference:	3	Environmental Conditions:	Hot

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : 20

Test depth (m) : 1001.00

Plate size : 605 mm diameter

Description of reaction load: Site Plant

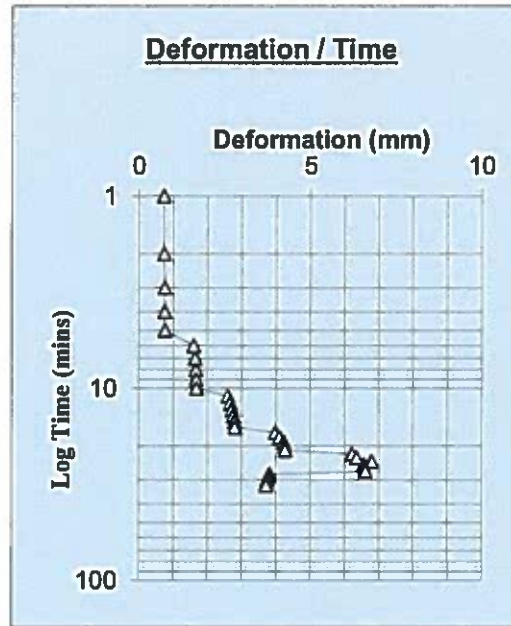
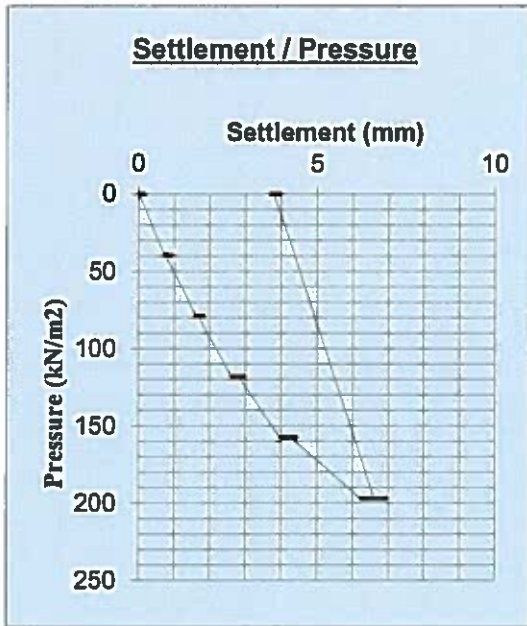
Seating pressure (kN/m<sup>2</sup>) : 9.8

Date Tested: **19th July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **6.79mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

[ ] Roger Rattue

[ ~~X~~ ] Mohamed Jaffer - Section Manager

[ ] Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 27 / Jul / 16

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## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Lynne Llewellyn**

**Report No.: UXB0340941**

Page 1 of 6 Pages

**Job No.: 51023757/M3**

Sample Information			
Test Locations:	5	Lab Reference:	M 24102754
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	18-25.6
Client Reference:	1	Environmental Conditions:	Fine/Hot

### Test Data

Loading procedure : Incremental  
 In-situ moisture content (%) : 21  
 Test depth (m) : 1.00

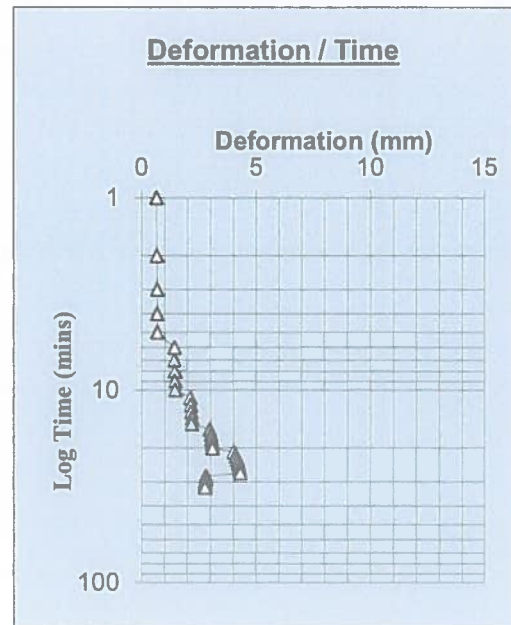
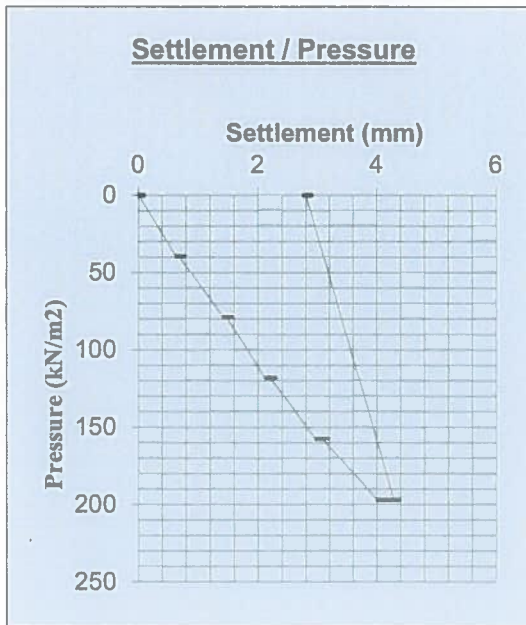
Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8

Date Tested: **20 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **4.29mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 08 / Aug / 16

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Environmental Scientifics Group Limited  
 Reg office: ESG House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ  
 Incorporated in England: 02880501

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Lynne Llewellyn**

**Report No.: UXB0340941**

Page 2 of 6 Pages

**Job No.: 51023757/M3**

Sample Information			
Test Locations:	8	Lab Reference:	M 24102755
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	18-25.6
Client Reference:	2	Environmental Conditions:	Fine/Hot

### Test Data

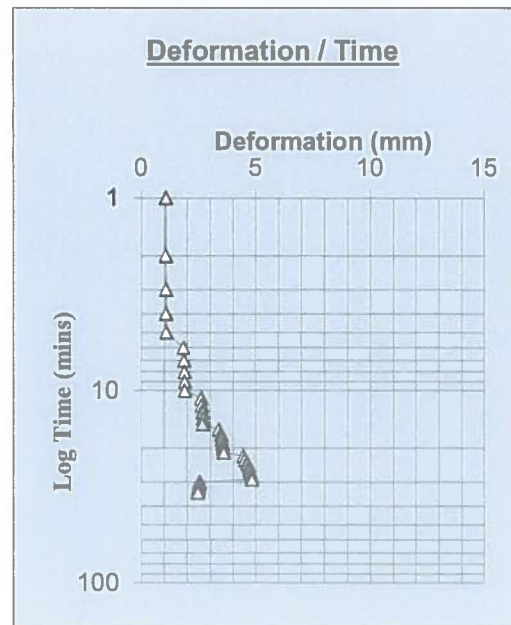
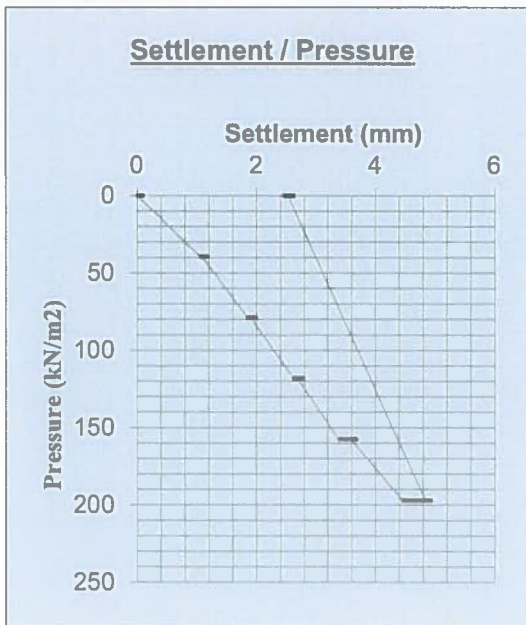
Loading procedure : Incremental  
 In-situ moisture content (%) : 20  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **20 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **4.83mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

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## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Lynne Llewellyn**

**Report No.: UXB0340941**

Page 3 of 6 Pages

**Job No.: 51023757/M3**

Sample Information			
Test Locations:	7	Lab Reference:	M 24102756
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	18-25.6
Client Reference:	3	Environmental Conditions:	Fine/Hot

### Test Data

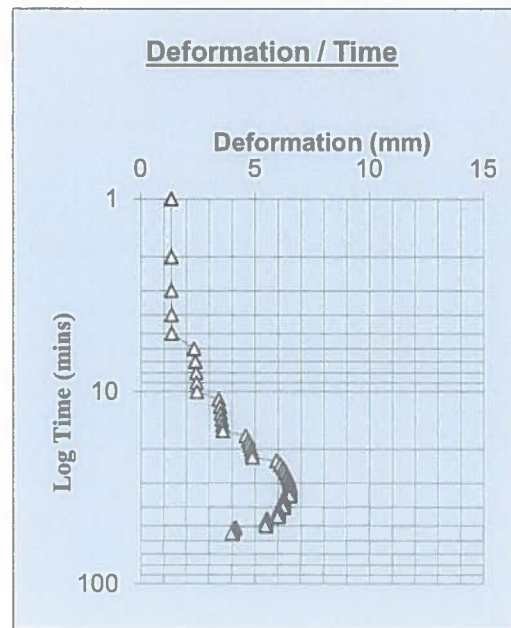
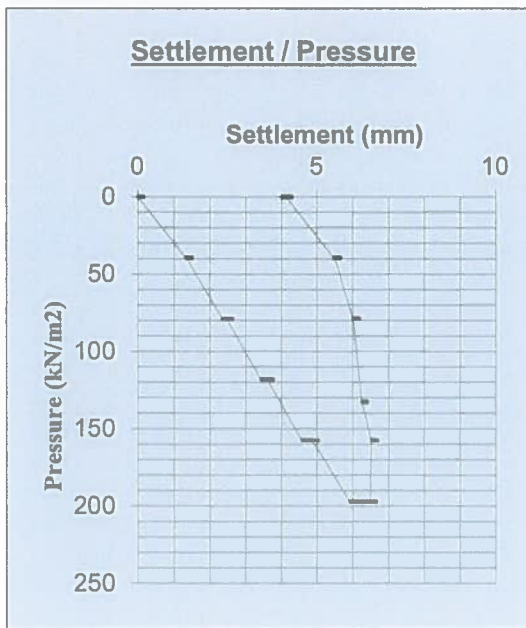
Loading procedure : Incremental  
 In-situ moisture content (%) : 20  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **20 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **6.52mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 08 / Aug / 16

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 Reg office: ESG House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ  
 Incorporated in England: 02880501

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Lynne Llewellyn**

**Report No.: UXB0340941**

Page 4 of 6 Pages

**Job No.: 51023757/M3**

Sample Information			
Test Locations:	6	Lab Reference:	M 24102757
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	18-25.6
Client Reference:	4	Environmental Conditions:	Fine/Hot

### Test Data

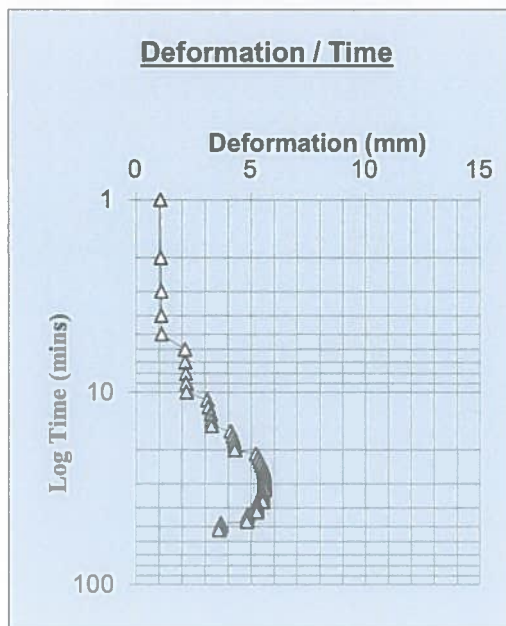
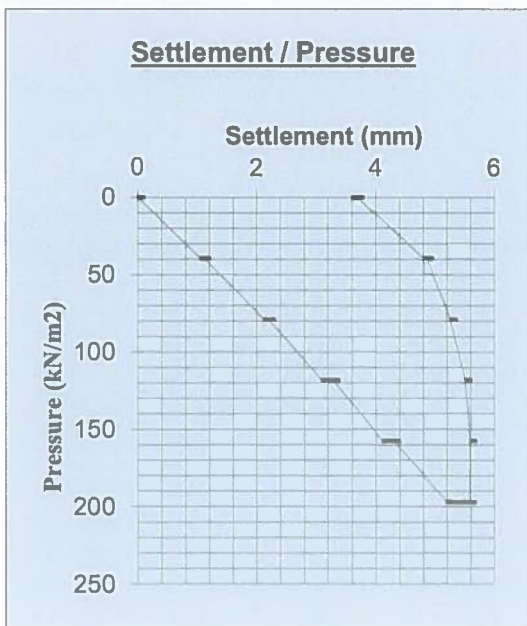
Loading procedure : Incremental  
 In-situ moisture content (%) : 21  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **20 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **5.59mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 08 / Aug / 16

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## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Lynne Llewellyn**

**Report No.: UXB0340941**

Page 5 of 6 Pages

**Job No.: 51023757/M3**

Sample Information			
Test Locations:	9	Lab Reference:	M 24102758
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	18-25.6
Client Reference:	5	Environmental Conditions:	Fine/Hot

### Test Data

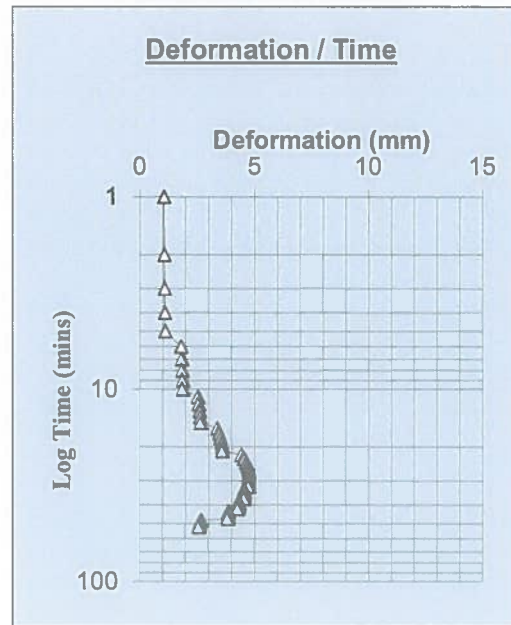
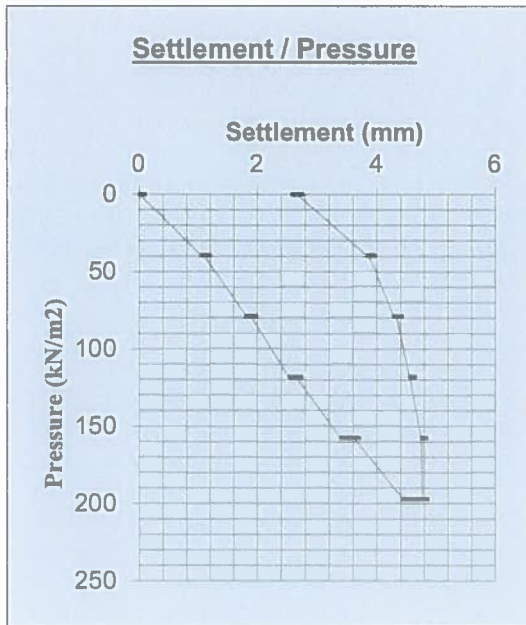
Loading procedure : Incremental  
 In-situ moisture content (%) : 20  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **20 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **4.76mm**



**Note :** N/A=Not Applicable N/G=Not Given

**Remarks:**

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

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 Incorporated in England: 02880501



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Lynne Llewellyn**

**Report No.: UXB0340941**

Page 6 of 6 Pages

**Job No.: 51023757/M3**

Sample Information			
Test Locations:	10	Lab Reference:	M 24102759
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	18-25.6
Client Reference:	6	Environmental Conditions:	Fine/Hot

### Test Data

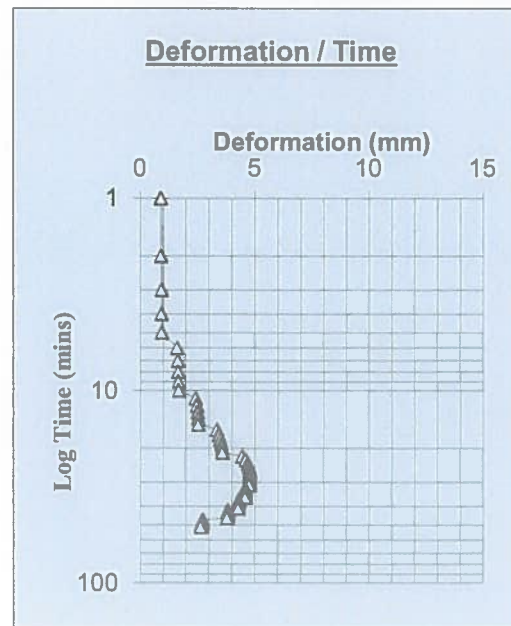
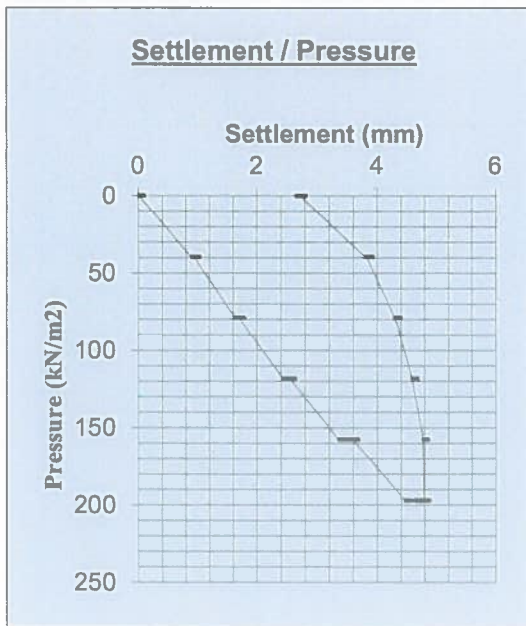
Loading procedure : Incremental  
 In-situ moisture content (%) : 15  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **20 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **4.79mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 08 / Aug / 16

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## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0340247**

Page 1 of 4 Pages

**Job No.: 51023757/M4**

Sample Information			
Test Locations:	1 (Location 4)	Lab Reference:	M 24094849
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	N/A
Client Reference:	1	Environmental Conditions:	Fine

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : To follow

Test depth (m) : 1.00

Plate size : 605 mm diameter

Description of reaction load: Site Plant

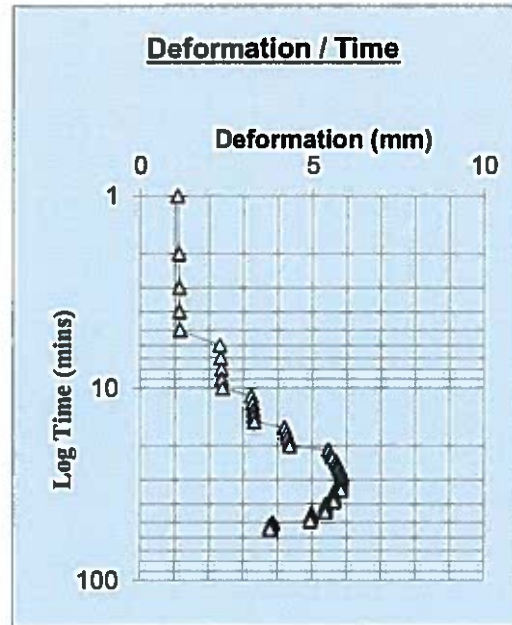
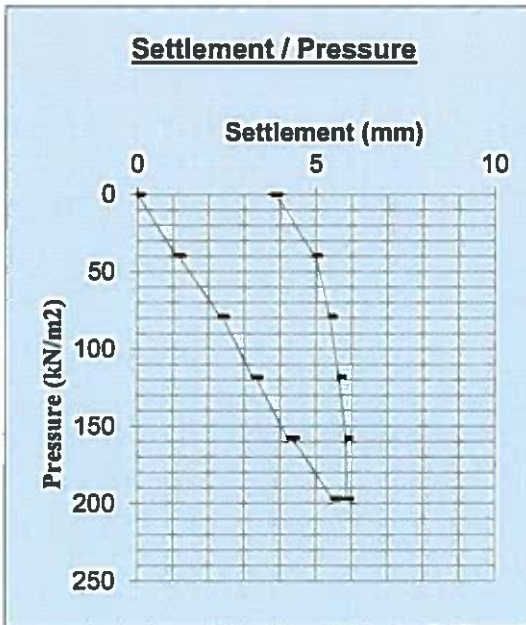
Seating pressure (kN/m<sup>2</sup>) : 9.8

Date Tested: **21 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **5.86mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks: Tested to site specification.

[ ] Roger Rattue

[x] Mohamed Jaffer - Section Manager

[ ] Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 27 / Jul / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLTI ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0340247**

Page 2 of 4 Pages

**Job No.: 51023757/M4**

Sample Information			
Test Locations:	2 (TBC)	Lab Reference:	M 24094850
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	N/A
Client Reference:	2	Environmental Conditions:	Fine

### Test Data

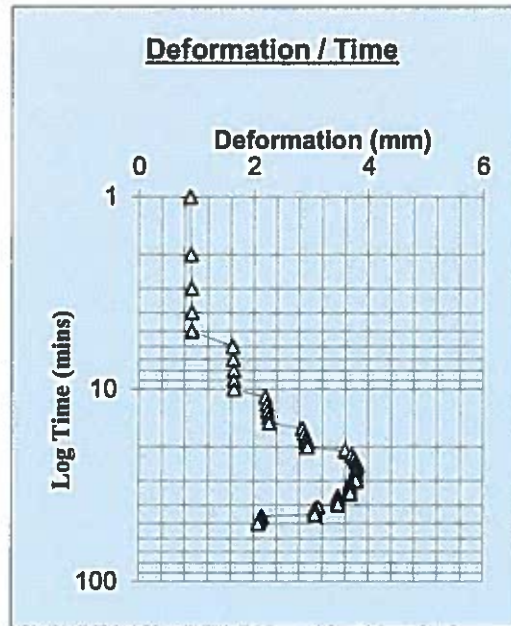
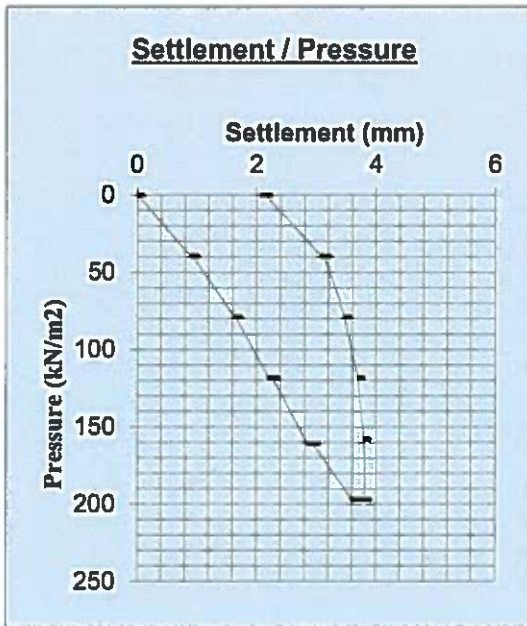
Loading procedure : Incremental  
 In-situ moisture content (%) : To follow  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **21 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **3.81mm**



**Note :** N/A=Not Applicable N/G=Not Given  
**Remarks:** Tested to site specification.

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 27 / Jul / 16

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 Form No. : PLT1 ver 4 02/06



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0340247**

Page 3 of 4 Pages

**Job No.: 51023757/M4**

Sample Information			
Test Locations:	3 (Location 9)	Lab Reference:	M 24094851
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	N/A
Client Reference:	3	Environmental Conditions:	Fine

### Test Data

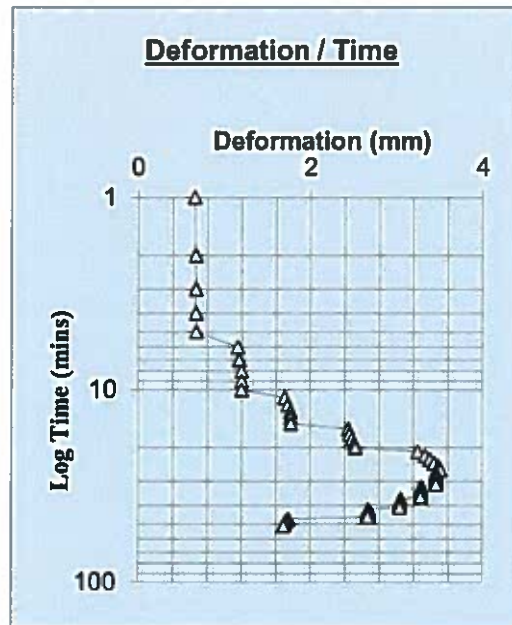
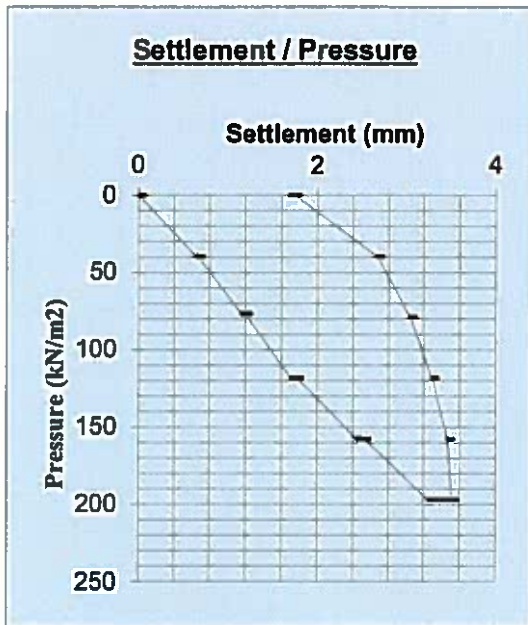
Loading procedure : Incremental  
 In-situ moisture content (%) : To follow  
 Test depth (m) : 1.00

Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8  
 Date Tested: **21 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **3.51mm**



**Note :** N/A=Not Applicable N/G=Not Given  
**Remarks:** Tested to site specification.

[ ] Roger Rattue  
~~[ ]~~ Mohamed Jaffer - Section Manager  
 [ ] Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 27 / Jul / 16

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 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0340247**

Page 4 of 4 Pages

**Job No.: 51023757/M4**

Sample Information			
Test Locations:	4	Lab Reference:	M 24094852
Material Type:	Brown Silty Sandy Gravelly Clay	Temperature (°C):	N/A
Client Reference:	4	Environmental Conditions:	Fine

### Test Data

Loading procedure : Incremental  
 In-situ moisture content (%) : To follow  
 Test depth (m) : 1.00

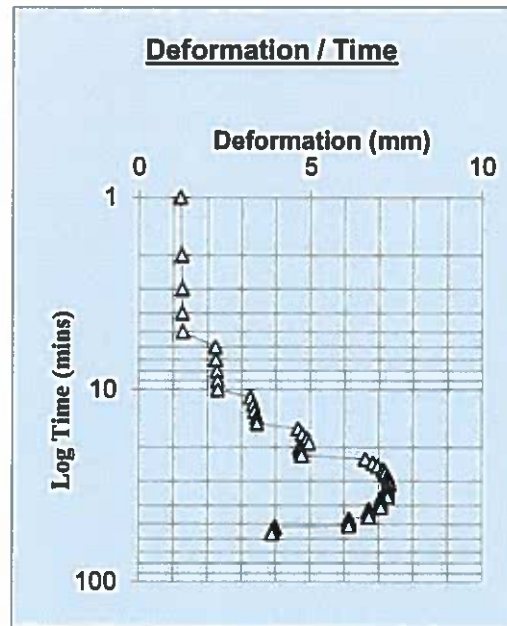
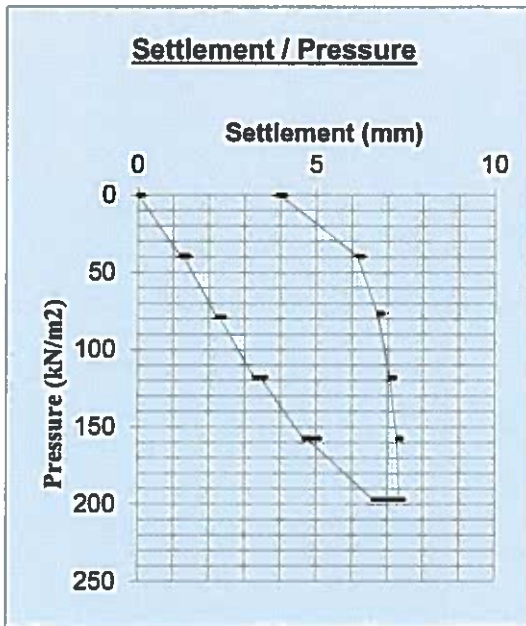
Plate size : 605 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.8

Date Tested: **21 July 2016**

### Test Results

Maximum Applied Pressure: **196.89 kN/m<sup>2</sup>**

Maximum Deformation: **7.32mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks: Tested to site specification.

[ ] Roger Rattue

[x] Mohamed Jaffer - Section Manager

[ ] Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 28 / Jul / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350081**

Page 1 of 4 Pages

**Job No.: 51023757/M5**

Sample Information			
Test Locations:	Block 28	Lab Reference:	M 24217726
Material Type:	Brown very Sandy Friable Clay	Temperature (°C):	8-14
Client Reference:	1	Environmental Conditions:	Cloudy

### Test Data

Loading procedure : Incremental  
 In-situ moisture content (%) : To follow  
 Test depth (m) : 1.00

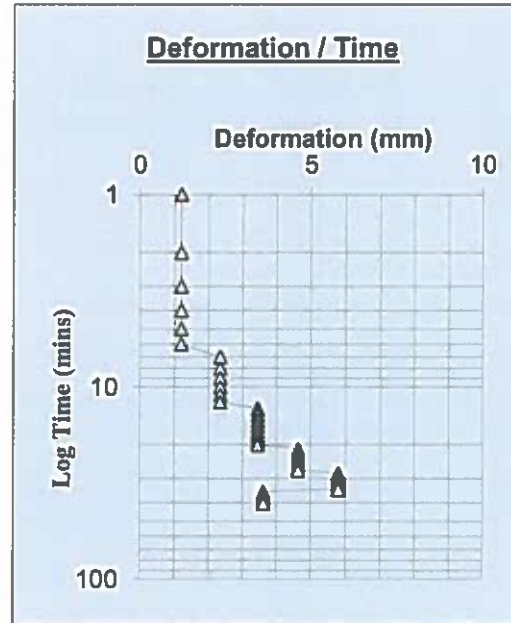
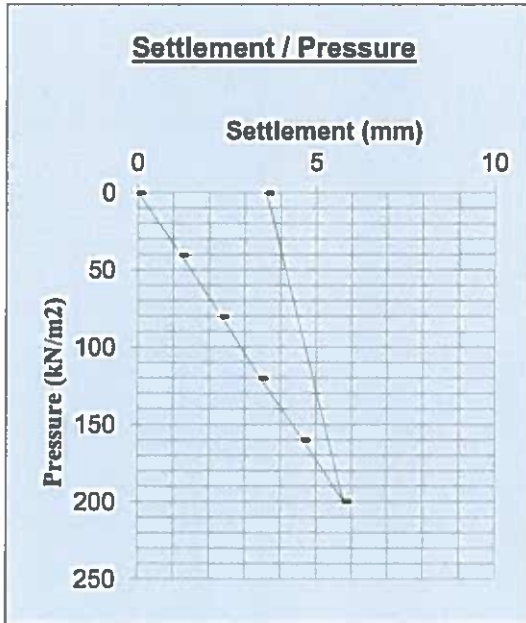
Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.9

Date Tested: **18 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **5.78mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 19/ Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350081**

Page 2 of 4 Pages

**Job No.: 51023757/M5**

Sample Information			
Test Locations:	Block 2	Lab Reference:	M 24217727
Material Type:	Brown very Sandy Friable Clay	Temperature (°C):	8-14
Client Reference:	2	Environmental Conditions:	Cloudy

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : To follow

Test depth (m) : 1.00

Plate size : 600 mm diameter

Description of reaction load: Site Plant

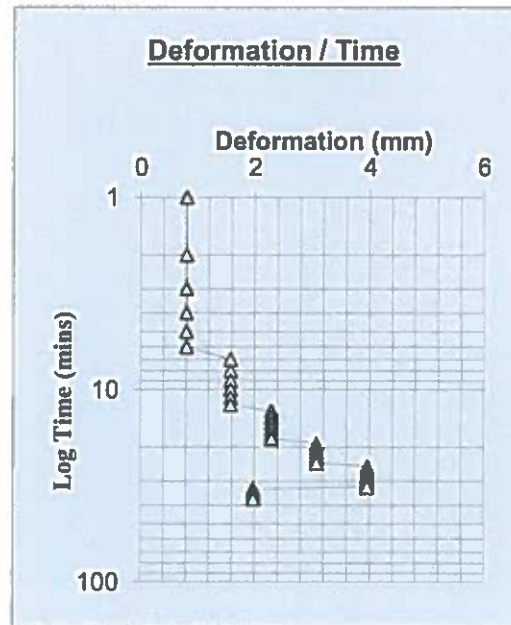
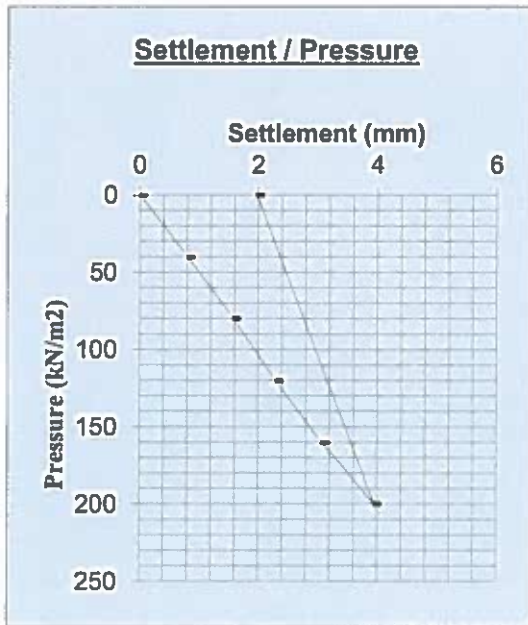
Seating pressure (kN/m<sup>2</sup>) : 9.9

Date Tested: **18 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **3.95mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

[ ] Roger Rattue

[x] Mohamed Jaffer - Section Manager

[ ] Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 19 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

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Environmental Scientifics Group Limited  
 Reg office: ESG House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ  
 Incorporated in England; 02880501

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350081**

Page 3 of 4 Pages

**Job No.: 51023757/M5**

Sample Information			
Test Locations:	Block 24/25	Lab Reference:	M 24217728
Material Type:	Brown very Sandy Friable Clay	Temperature (°C):	8-14
Client Reference:	3	Environmental Conditions:	Cloudy

### Test Data

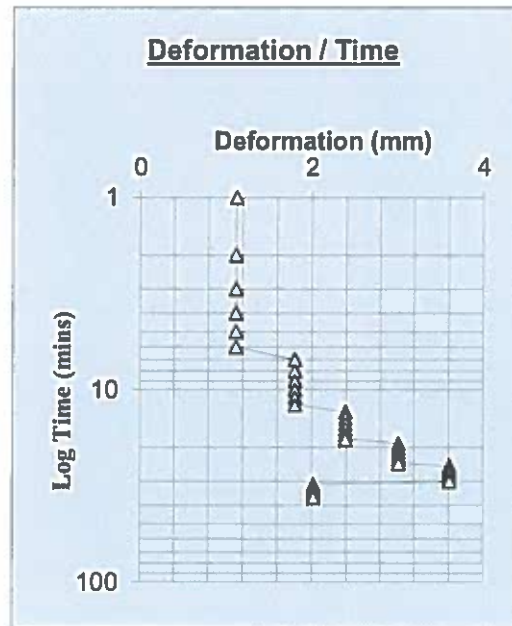
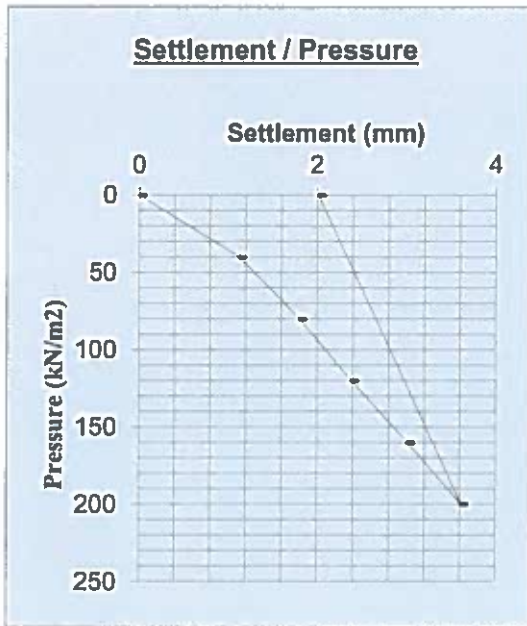
Loading procedure : Incremental  
 In-situ moisture content (%) : To follow  
 Test depth (m) : 1.30

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.9  
 Date Tested: **18 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **3.61 mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 19 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350081**

Page 4 of 4 Pages

**Job No.: 51023757/M5**

Sample Information			
Test Locations:	Block 4	Lab Reference:	M 24217729
Material Type:	Brown very Sandy Friable Clay	Temperature (°C):	8-14
Client Reference:	4	Environmental Conditions:	Cloudy

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : To follow

Test depth (m) : 1.20

Plate size : 600 mm diameter

Description of reaction load: Site Plant

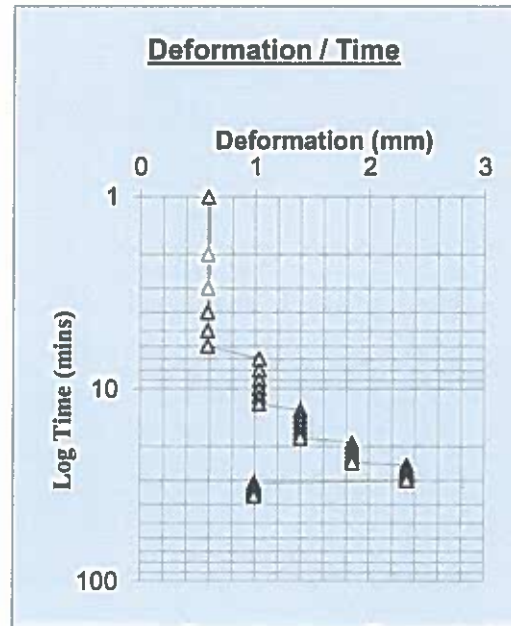
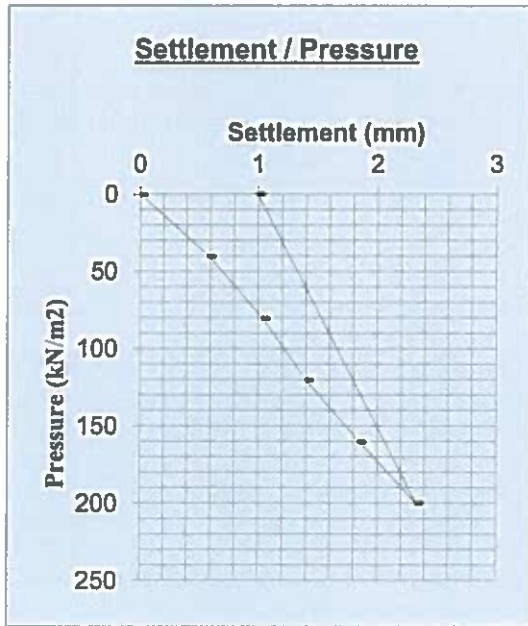
Seating pressure (kN/m<sup>2</sup>) : 9.9

Date Tested: **18 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **2.33mm**



**Note :** N/A=Not Applicable N/G=Not Given

**Remarks:**

Roger Rattue

Mohamed Jaffer - Section Manager

Clive Moore- Client Liaison Manager

For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 19 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
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 Incorporated in England: 02880501



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350247**

Page 1 of 6 Pages

**Job No.: 51023757/M6**

Sample Information			
Test Locations:	Block 61	Lab Reference:	M 24219889
Material Type:	Brown very Sandy Friable Clay	Temperature (°C):	8-13
Client Reference:	5	Environmental Conditions:	Windy

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : 21

Test depth (m) : 1.20

Plate size : 600 mm diameter

Description of reaction load: Site Plant

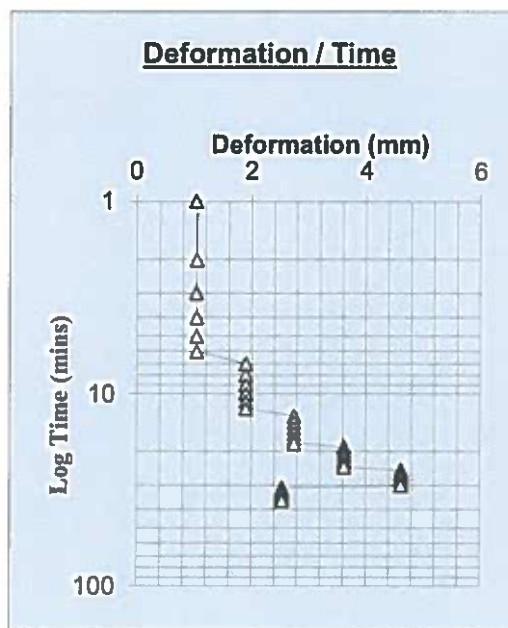
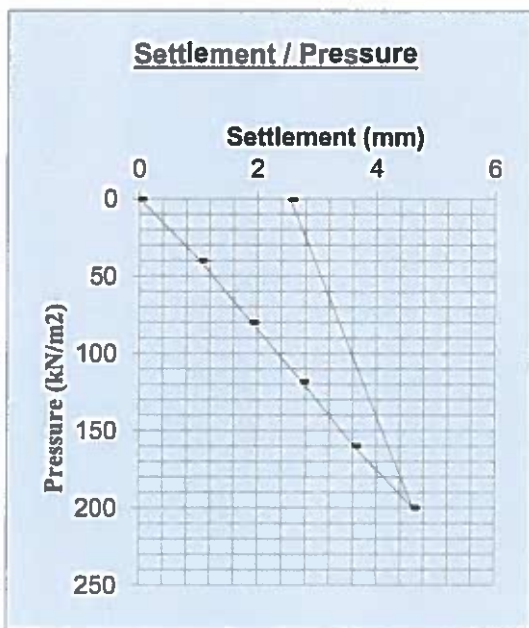
Seating pressure (kN/m<sup>2</sup>) : 9.9

Date Tested: **19 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **4.62mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350247**

Page 2 of 6 Pages

**Job No.: 51023757/M6**

Sample Information			
Test Locations:	Block 59	Lab Reference:	M 24219890
Material Type:	Brown Sandy Friable Clay	Temperature (°C):	8-13
Client Reference:	6	Environmental Conditions:	Windy

### Test Data

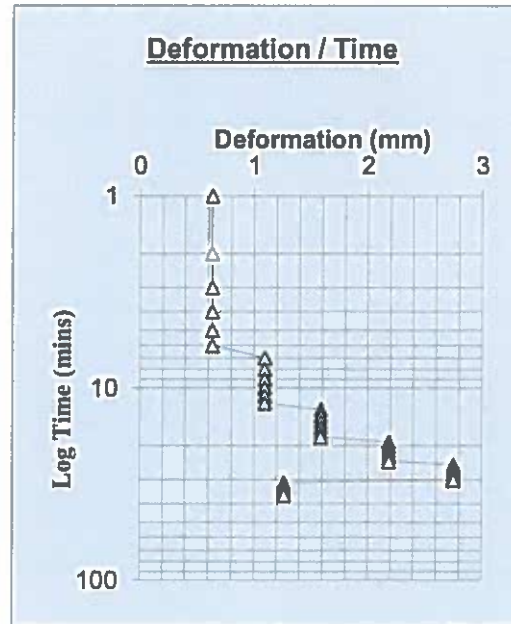
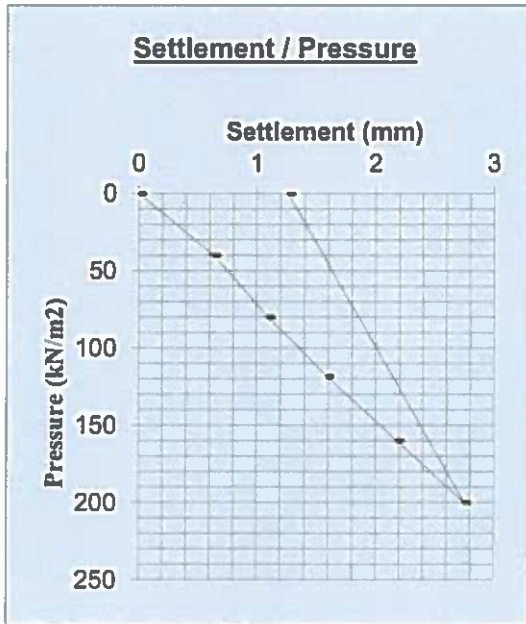
Loading procedure : Incremental  
 In-situ moisture content (%) : 19  
 Test depth (m) : 1.20

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.9  
 Date Tested: **19 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **2.75mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pincham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350247**

Page 3 of 6 Pages

**Job No.: 51023757/M6**

Sample Information	
Test Locations: Block 63	Lab Reference: M 24219891
Material Type: Brown Sandy Friable Clay	Temperature (°C): 8-13
Client Reference: 7	Environmental Conditions: Windy

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : 20

Test depth (m) : 1.10

Plate size : 600 mm diameter

Description of reaction load: Site Plant

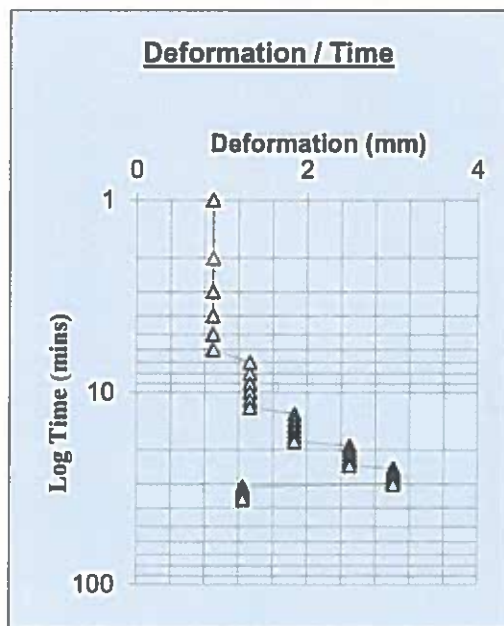
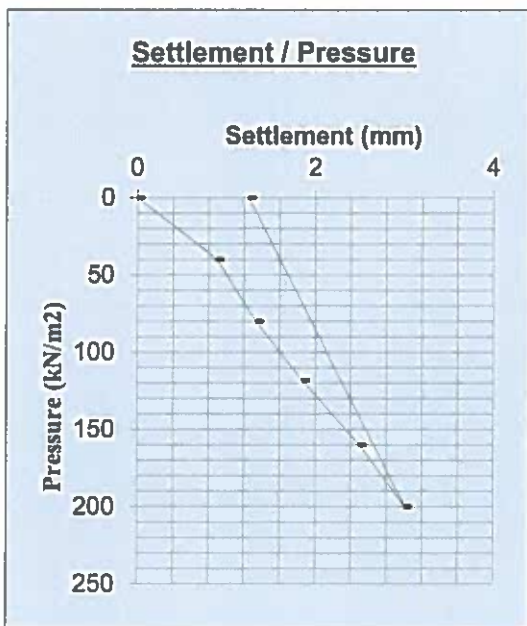
Seating pressure (kN/m<sup>2</sup>) : 9.9

Date Tested: **19 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **3.01mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLTI ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350247**

Page 4 of 6 Pages

**Job No.: 51023757/M6**

Sample Information			
Test Locations:	Block 66	Lab Reference:	M 24219892
Material Type:	Brown Sandy slightly Gravelly Clay	Temperature (°C):	8-13
Client Reference:	8	Environmental Conditions:	Windy

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : 16

Test depth (m) : 1.00

Plate size : 600 mm diameter

Description of reaction load: Site Plant

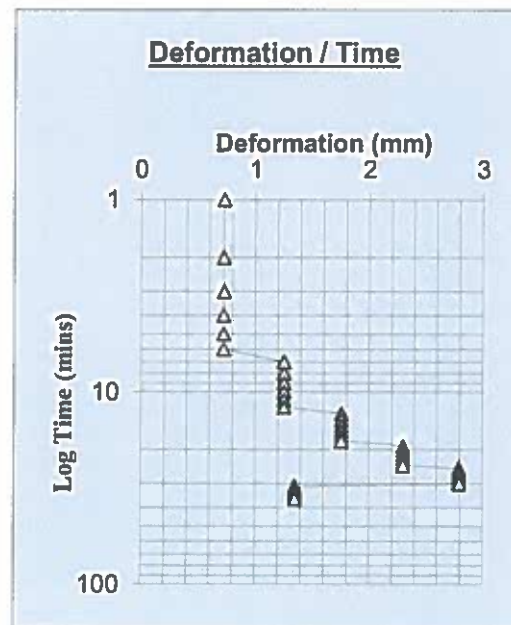
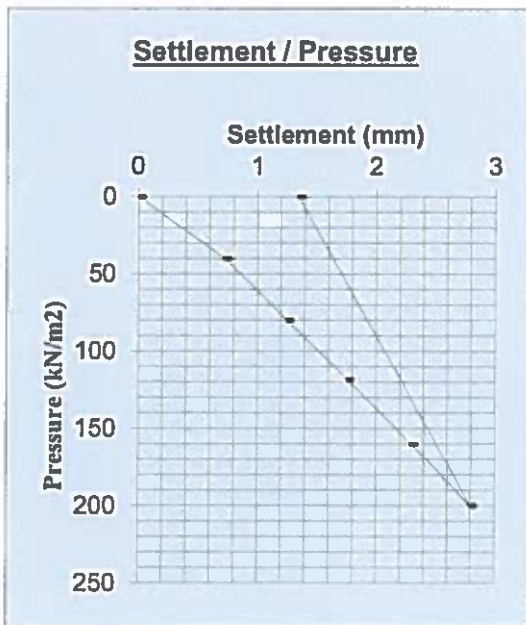
Seating pressure (kN/m<sup>2</sup>) : 9.9

Date Tested: **19 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **2.79mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

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Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
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Environmental Scientifics Group Limited  
 Reg office: ESG House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ  
 Incorporated in England: 02880501



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350247**

Page 5 of 6 Pages

**Job No.: 51023757/M6**

Sample Information			
Test Locations:	Block 85	Lab Reference:	M 24219893
Material Type:	Brown Sandy slightly Gravelly Clay	Temperature (°C):	8-13
Client Reference:	9	Environmental Conditions:	Windy

### Test Data

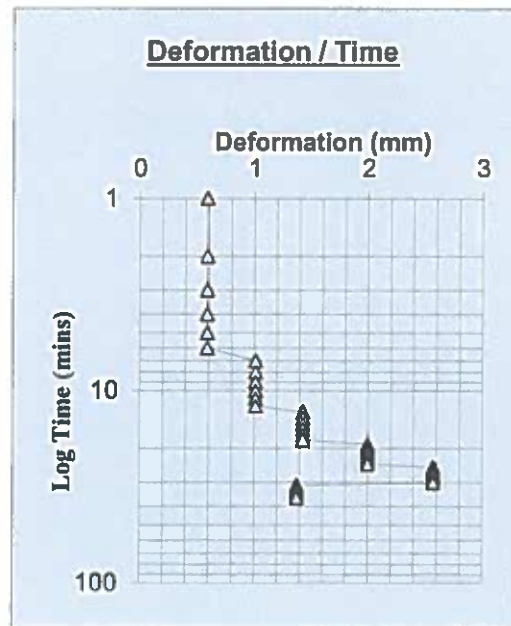
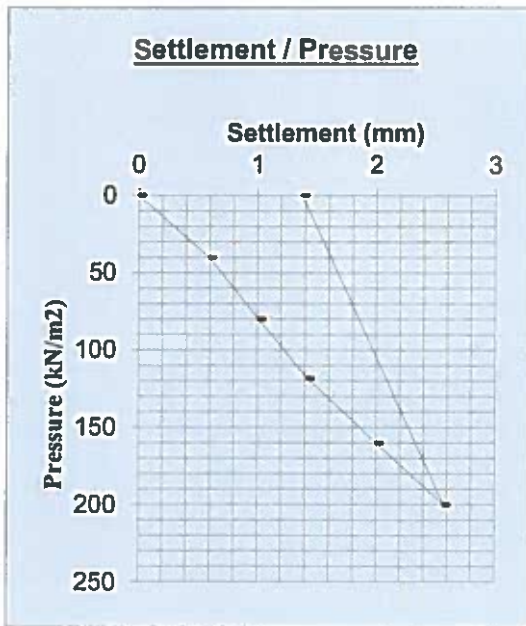
Loading procedure : Incremental  
 In-situ moisture content (%) : 18  
 Test depth (m) : 1.10

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 9.9  
 Date Tested: **19 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **2.57mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattuc  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
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## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Maidstone**

**Contact : Brian Nottage**

**Report No.: UXB0350247**

Page 6 of 6 Pages

**Job No.: 51023757/M6**

Sample Information			
Test Locations:	Block 92	Lab Reference:	M 24219894
Material Type:	Brown Sandy slightly Gravelly Clay	Temperature (°C):	8-13
Client Reference:	<b>10</b>	Environmental Conditions:	Windy

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : 23

Test depth (m) : 0.90

Plate size : 600 mm diameter

Description of reaction load: Site Plant

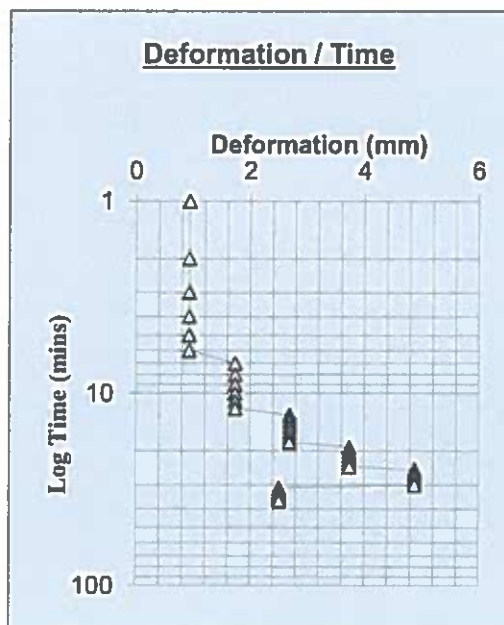
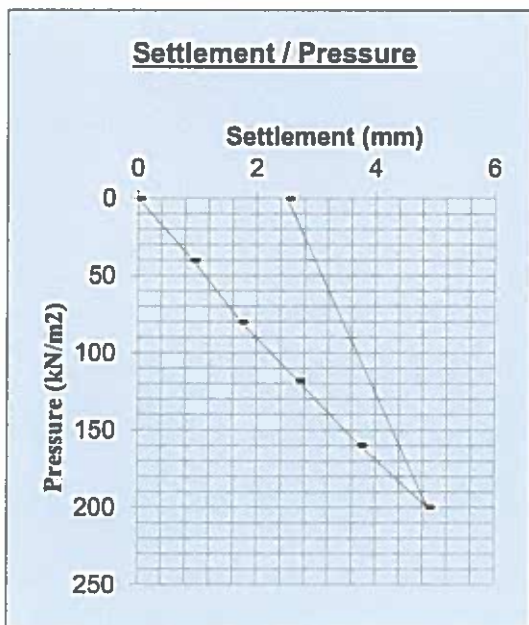
Seating pressure (kN/m<sup>2</sup>) : 9.9

Date Tested: **19 October 2016**

### Test Results

Maximum Applied Pressure: **199.83 kN/m<sup>2</sup>**

Maximum Deformation: **4.88mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Brian Nottage**

**Report No.: UXB0350393**

Page 1 of 4 Pages

**Job No.: 51023757/M7**

Sample Information	
Test Locations: Plot 89	Lab Reference: M 24221920
Material Type: Brown Clay	Temperature (°C): 12-13
Client Reference: 11	Environmental Conditions: Dry

### Test Data

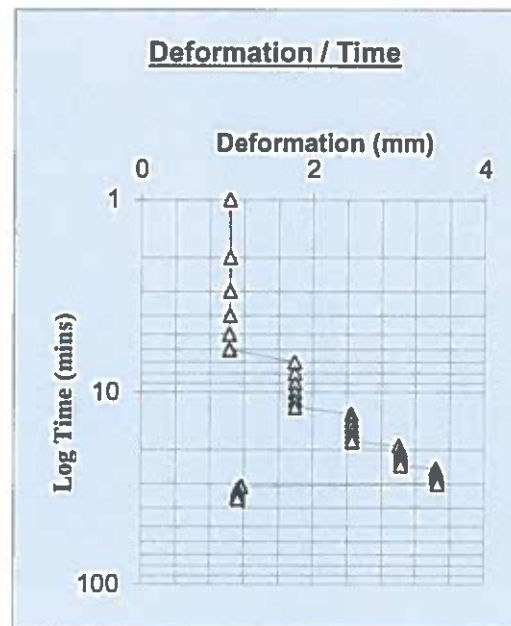
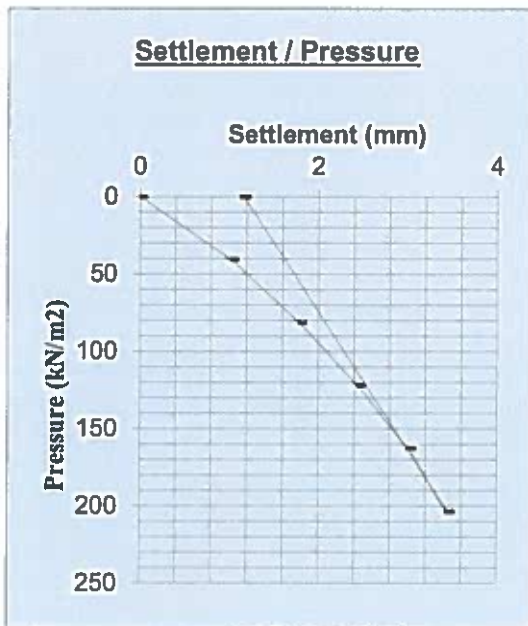
Loading procedure : Incremental  
 In-situ moisture content (%) : 19  
 Test depth (m) : 1.00

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 10.3  
 Date Tested: **20 October 2016**

### Test Results

Maximum Applied Pressure: **203.36 kN/m<sup>2</sup>**

Maximum Deformation: **3.45mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Brian Nottage**

**Report No.: UXB0350393**

Page 2 of 4 Pages

**Job No.: 51023757/M7**

Sample Information			
Test Locations:	Plot 89	Lab Reference:	M 24221921
Material Type:	Brown Clay	Temperature (°C):	12-13
Client Reference:	12	Environmental Conditions:	Dry

### Test Data

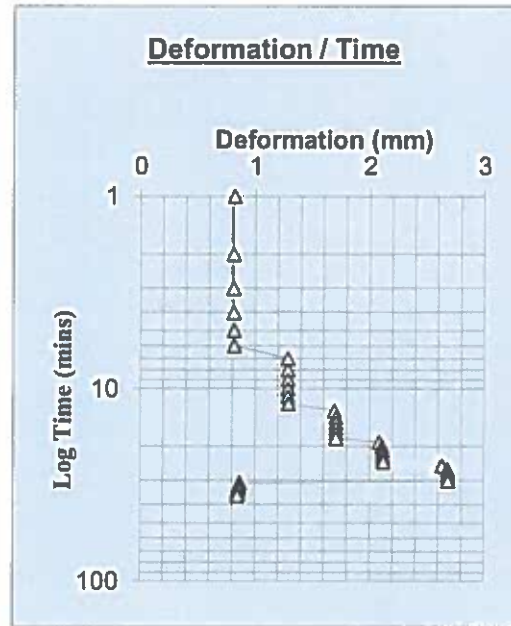
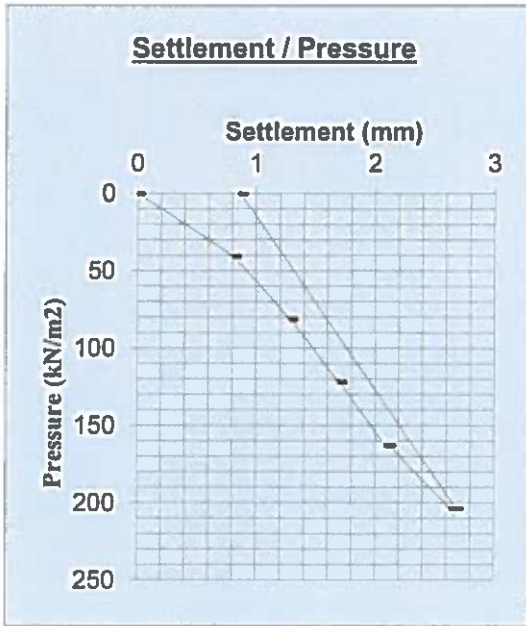
Loading procedure : Incremental  
 In-situ moisture content (%): 18  
 Test depth (m): 1.00

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>): 10.3  
 Date Tested: **20 October 2016**

### Test Results

Maximum Applied Pressure: **203.36 kN/m<sup>2</sup>**

Maximum Deformation: **2.68mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

[ ] Roger Rattue  
 [ ] Mohamed Jaffer - Section Manager  
 [ ] Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06



## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Brian Nottage**

**Report No.: UXB0350393**

Page 3 of 4 Pages

**Job No.: 51023757/M7**

Sample Information			
Test Locations:	Plot 89	Lab Reference:	M 24221922
Material Type:	Brown Clay	Temperature (°C):	12-13
Client Reference:	<b>13</b>	Environmental Conditions:	Dry

### Test Data

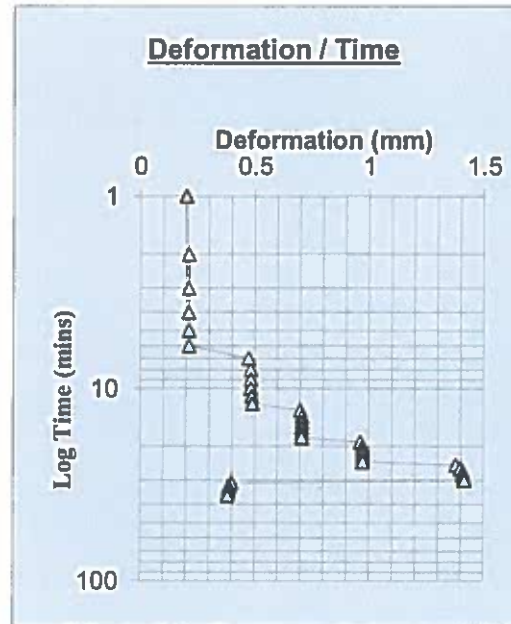
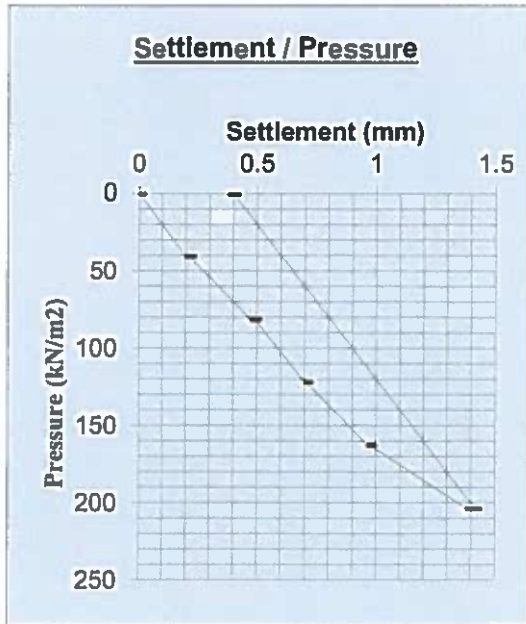
Loading procedure : Incremental  
 In-situ moisture content (%) : 19  
 Test depth (m) : 1.00

Plate size : 600 mm diameter  
 Description of reaction load: Site Plant  
 Seating pressure (kN/m<sup>2</sup>) : 10.3  
 Date Tested: **20 October 2016**

### Test Results

Maximum Applied Pressure: **203.36 kN/m<sup>2</sup>**

Maximum Deformation: **1.42mm**



Note : N/A=Not Applicable N/G=Not Given  
 Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

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 Incorporated in England: 02880501

## Plate Loading Test

**Client : Environmental Scientifics Group**

**Site : Pineham Road, Dover, Kent, CT15 5HA**

**Tested By: ESG Uxbridge**

**Contact : Brian Nottage**

**Report No.: UXB0350393**

Page 4 of 4 Pages

**Job No.: 51023757/M7**

Sample Information			
Test Locations:	Plot 89	Lab Reference:	M 24221923
Material Type:	Brown Clay	Temperature (°C):	12-13
Client Reference:	<b>14</b>	Environmental Conditions:	Dry

### Test Data

Loading procedure : Incremental

In-situ moisture content (%) : 19

Test depth (m) : 1.00

Plate size : 600 mm diameter

Description of reaction load: Site Plant

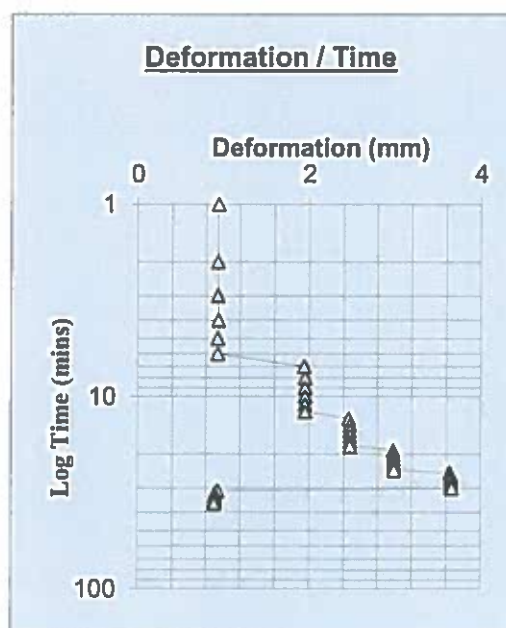
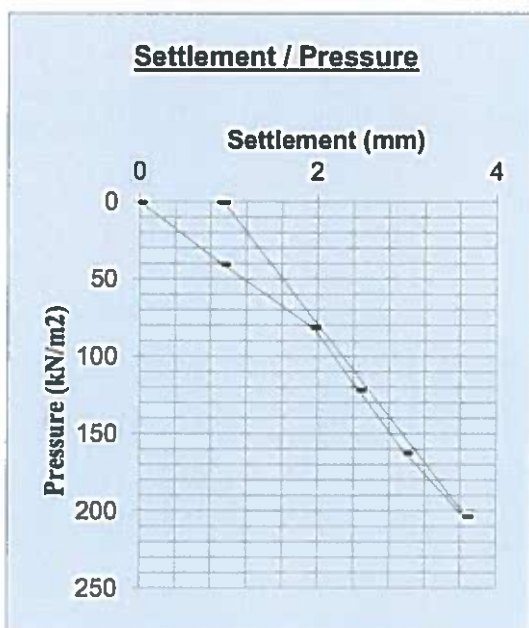
Seating pressure (kN/m<sup>2</sup>) : 10.3

Date Tested: **20.October 2016**

### Test Results

Maximum Applied Pressure: **203.36 kN/m<sup>2</sup>**

Maximum Deformation: **3.66mm**



Note : N/A=Not Applicable N/G=Not Given

Remarks:

Roger Rattue  
 Mohamed Jaffer - Section Manager  
 Clive Moore- Client Liaison Manager  
 For and on behalf of ESG

**Distribution :**

Date Checked & Issued : 21 / Oct / 16

Certified that testing was to ESG In-House Procedure which is based on B.S. 1377- 9 : 1990 :  
 4.1 and moisture content was to B.S. 1377 Part 2: 3.2: 1990  
 Form No. : PLT1 ver 4 02/06

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Environmental Scientifics Group Limited  
 Reg office: ESG House, Bretby Business Park, Ashby Road, Burton upon Trent, DE15 0YZ  
 Incorporated in England: 02880501

## Determination of Undrained Shear Strength - Hand Vane TP IH/HVane

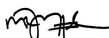
**Report No:** UXB0350081/729/M1 **Report Date:** 20 October 2016  
**Client:** ENVIRONMENTAL SCIENTIFICS GROUP **Our Contract Ref:** 51023757/M5  
**Address:** ESG Maidstone **Client Order No.:** D6053-16  
**Date Sampled:** 18 Oct 2016  
**Date Received:** 18 Oct 2016  
**Date Tested:** 18 Oct 2016  
**Client Contact:** Brian Nottage  
**Site:** Pineham Road, Dover, Kent CT15 5HA  
**Location:** See Test References  
**Description:** Brown Sandy Gravel **Material Specification:** Not given

### Results :

Laboratory Reference	Location	Depth (mm)	Hand Vane (kPa)
24217726	1 Block 28 - 1	80	90
24217727	2 Block 2 - 1	80	124
24217728	3 Block 24/25 - 1.3	80	95
24217729	4 Block 4	80	127

Testing carried out in accordance with TP IH/HVane

**Signatory:**



Mohamed Jaffer - Section Manager

**for and on behalf of Environmental Scientifics Group Limited**

## Determination of Undrained Shear Strength - Hand Vane TP IH/HVane

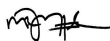
**Report No:** UXB0350247/894/M1 **Report Date:** 21 October 2016  
**Client:** ENVIRONMENTAL SCIENTIFICS GROUP **Our Contract Ref:** 51023757/M6  
**Address:** ESG Maidstone **Client Order No.** D6053-16  
**Date Sampled:** 19 Oct 2016  
**Date Received:** 19 Oct 2016  
**Date Tested:** 19 Oct 2016  
**Client Contact:** Brian Nottage  
**Site:** Pineham Road, Dover, Kent CT15 5HA  
**Location:** See Test References  
**Description:** Brown Sandy Gravel **Material Specification:** Not given

### Results :

Laboratory Reference	Location	Depth (mm)	Hand Vane (kPa)
24219889	5 Block 61 - 1.2	80	80
24219890	6 Block 59 - 1.2	80	98
24219891	7 Block 63 - 1.1	80	124
24219892	8 Block 66 - 1	80	126
24219893	9 Block 85 - 1.1	80	124
24219894	10 Block 92 - 0.9	80	74

Testing carried out in accordance with TP IH/HVane

**Signatory:**



Mohamed Jaffer - Section Manager

**for and on behalf of Environmental Scientifics Group Limited**