

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 15 September 2015  
Test Report Ref: STR 428289

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp1/L1/3CF
Date and Time of Sampling:	05/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.239 Mg/m <sup>3</sup>
Natural Moisture Content	11.5 %
Dry Density	2.008 Mg/m <sup>3</sup>
Air Voids	3.6 %

**Comments**

Particle Density = 2.74 (Found)


Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

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**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp2/L3/3CF
Date and Time of Sampling:	06/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.230 Mg/m <sup>3</sup>
Natural Moisture Content	12.7 %
Dry Density	1.979 Mg/m <sup>3</sup>
Air Voids	2.6 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

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4245 Park Approach  
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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp3/L6/3CF
Date and Time of Sampling:	06/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.295 Mg/m <sup>3</sup>
Natural Moisture Content	11.0 %
Dry Density	2.068 Mg/m <sup>3</sup>
Air Voids	1.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

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Leeds

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp4/L9/3CF
Date and Time of Sampling:	07/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.223 Mg/m <sup>3</sup>
Natural Moisture Content	11.8 %
Dry Density	1.988 Mg/m <sup>3</sup>
Air Voids	4.0 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

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Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
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Thorpe Park  
Leeds

Date: 15 September 2015  
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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp5/L10/3CF
Date and Time of Sampling:	10/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.209 Mg/m <sup>3</sup>
Natural Moisture Content	13.0 %
Dry Density	1.955 Mg/m <sup>3</sup>
Air Voids	3.2 %

**Comments**

Particle Density = 2.74 (Found)


Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

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Leeds

Date: 15 September 2015  
Test Report Ref: STR 428294

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp6/L14/4CF
Date and Time of Sampling:	10/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.266 Mg/m <sup>3</sup>
Natural Moisture Content	10.7 %
Dry Density	2.047 Mg/m <sup>3</sup>
Air Voids	3.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

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Meical Owen  
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Leeds

Date: 15 September 2015  
Test Report Ref: STR 428295

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp7/L15/4CF
Date and Time of Sampling:	11/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.218 Mg/m <sup>3</sup>
Natural Moisture Content	12.6 %
Dry Density	1.970 Mg/m <sup>3</sup>
Air Voids	3.3 %

**Comments**

Particle Density = 2.74 (Found)


Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

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Leeds

Date: 15 September 2015  
Test Report Ref: STR 428296

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp8/L18/4CF
Date and Time of Sampling:	12/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.295 Mg/m <sup>3</sup>
Natural Moisture Content	12.3 %
Dry Density	2.044 Mg/m <sup>3</sup>
Air Voids	0.3 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



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Stratus Environmental Limited  
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Date: 15 September 2015  
Test Report Ref: STR 428297

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp9/L19/4CF
Date and Time of Sampling:	12/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.303 Mg/m <sup>3</sup>
Natural Moisture Content	10.9 %
Dry Density	2.077 Mg/m <sup>3</sup>
Air Voids	1.6 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
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Stratus Environmental Limited  
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Leeds

Date: 15 September 2015  
Test Report Ref: STR 428298

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp10/L21/4CF
Date and Time of Sampling:	13/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A


**RESULTS:**

Bulk Density	2.211 Mg/m <sup>3</sup>
Natural Moisture Content	11.6 %
Dry Density	1.981 Mg/m <sup>3</sup>
Air Voids	4.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate  
Prepared by:-   
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Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
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Leeds

Date: 15 September 2015  
Test Report Ref: STR 428299

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

### **LABORATORY TEST REPORT**

#### **TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

#### **SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp11/L22/4CF
Date and Time of Sampling:	13/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

#### **RESULTS:**

Bulk Density	2.256 Mg/m <sup>3</sup>
Natural Moisture Content	13.8 %
Dry Density	1.982 Mg/m <sup>3</sup>
Air Voids	0.3 %

#### **Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
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Thorpe Park  
Leeds

Date: 15 September 2015  
Test Report Ref: STR 428300

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp12/L24/4CF
Date and Time of Sampling:	13/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.277 Mg/m <sup>3</sup>
Natural Moisture Content	11.8 %
Dry Density	2.037 Mg/m <sup>3</sup>
Air Voids	1.6 %

**Comments**

Particle Density = 2.74 (Found)


Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 15 September 2015  
Test Report Ref: STR 428301

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S54309
Client Ref. :	Comp13/L26/4CF
Date and Time of Sampling:	17/08/2015
Date of Receipt at Lab:	20/08/2015
Date of Start of Test:	25/08/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.292 Mg/m <sup>3</sup>
Natural Moisture Content	10.0 %
Dry Density	2.084 Mg/m <sup>3</sup>
Air Voids	3.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433666

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp14/L27/5CF
Date and Time of Sampling:	17/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.208 Mg/m <sup>3</sup>
Natural Moisture Content	12.0 %
Dry Density	1.971 Mg/m <sup>3</sup>
Air Voids	4.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433667

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp15/L29/5CF
Date and Time of Sampling:	18/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.294 Mg/m <sup>3</sup>
Natural Moisture Content	11.4 %
Dry Density	2.059 Mg/m <sup>3</sup>
Air Voids	1.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433668

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

### **LABORATORY TEST REPORT**

#### **TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

#### **SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp16/L31/5CF
Date and Time of Sampling:	18/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

#### **RESULTS:**

Bulk Density	2.230 Mg/m <sup>3</sup>
Natural Moisture Content	13.7 %
Dry Density	1.961 Mg/m <sup>3</sup>
Air Voids	1.6 %

#### **Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



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Technical Manager



Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433669

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp17/L32/5CF
Date and Time of Sampling:	18/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.293 Mg/m <sup>3</sup>
Natural Moisture Content	12.3 %
Dry Density	2.042 Mg/m <sup>3</sup>
Air Voids	0.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433670

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp18/L30/5CF
Date and Time of Sampling:	18/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.306 Mg/m <sup>3</sup>
Natural Moisture Content	9.2 %
Dry Density	2.112 Mg/m <sup>3</sup>
Air Voids	3.5 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



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Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433671

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp19/L29/5CF
Date and Time of Sampling:	18/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.291 Mg/m <sup>3</sup>
Natural Moisture Content	11.8 %
Dry Density	2.049 Mg/m <sup>3</sup>
Air Voids	1.0 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433672

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp20/L1/4B
Date and Time of Sampling:	20/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.227 Mg/m <sup>3</sup>
Natural Moisture Content	14.2 %
Dry Density	1.950 Mg/m <sup>3</sup>
Air Voids	1.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
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Leeds

Date: 20 November 2015  
Test Report Ref: STR 433673

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Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp21/L3/5B
Date and Time of Sampling:	21/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.185 Mg/m <sup>3</sup>
Natural Moisture Content	10.8 %
Dry Density	1.972 Mg/m <sup>3</sup>
Air Voids	6.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433674

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp22/L4/4B
Date and Time of Sampling:	21/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.265 Mg/m <sup>3</sup>
Natural Moisture Content	13.1 %
Dry Density	2.003 Mg/m <sup>3</sup>
Air Voids	0.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433675

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Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp23/L2/5B
Date and Time of Sampling:	20/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.162 Mg/m <sup>3</sup>
Natural Moisture Content	16.2 %
Dry Density	1.861 Mg/m <sup>3</sup>
Air Voids	1.9 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 433676

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Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55020
Client Ref. :	Comp24/L2/4B
Date and Time of Sampling:	20/08/2015
Date of Receipt at Lab:	29/09/2015
Date of Start of Test:	30/09/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Stratus
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.238 Mg/m <sup>3</sup>
Natural Moisture Content	14.5 %
Dry Density	1.955 Mg/m <sup>3</sup>
Air Voids	0.3 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager



Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435532

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp25/L1/2G
Date and Time of Sampling:	24/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.266 Mg/m <sup>3</sup>
Natural Moisture Content	11.7 %
Dry Density	2.029 Mg/m <sup>3</sup>
Air Voids	2.2 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435533

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Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp26/L1/2H
Date and Time of Sampling:	24/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.253 Mg/m <sup>3</sup>
Natural Moisture Content	13.6 %
Dry Density	1.983 Mg/m <sup>3</sup>
Air Voids	0.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435534

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp27/L1/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.322 Mg/m <sup>3</sup>
Natural Moisture Content	10.9 %
Dry Density	2.094 Mg/m <sup>3</sup>
Air Voids	0.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435535

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp28/L2/3GH
Date and Time of Sampling:	28/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.281 Mg/m <sup>3</sup>
Natural Moisture Content	12.1 %
Dry Density	2.035 Mg/m <sup>3</sup>
Air Voids	1.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435536

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp29/L2/2GH
Date and Time of Sampling:	24/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.285 Mg/m <sup>3</sup>
Natural Moisture Content	11.9 %
Dry Density	2.042 Mg/m <sup>3</sup>
Air Voids	1.2 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435537

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp30/L2/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.225 Mg/m <sup>3</sup>
Natural Moisture Content	12.6 %
Dry Density	1.976 Mg/m <sup>3</sup>
Air Voids	3.0 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435538

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp31/L4/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.257 Mg/m <sup>3</sup>
Natural Moisture Content	13.4 %
Dry Density	1.990 Mg/m <sup>3</sup>
Air Voids	0.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435539

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp32/L3/3GH
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.179 Mg/m <sup>3</sup>
Natural Moisture Content	13.6 %
Dry Density	1.918 Mg/m <sup>3</sup>
Air Voids	3.9 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager



Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435540

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp33/L3/2GH
Date and Time of Sampling:	25/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.173 Mg/m <sup>3</sup>
Natural Moisture Content	11.7 %
Dry Density	1.945 Mg/m <sup>3</sup>
Air Voids	6.3 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435541

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp34/L6/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.263 Mg/m <sup>3</sup>
Natural Moisture Content	11.0 %
Dry Density	2.039 Mg/m <sup>3</sup>
Air Voids	3.2 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435878

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp35/L7/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.273 Mg/m <sup>3</sup>
Natural Moisture Content	11.8 %
Dry Density	2.033 Mg/m <sup>3</sup>
Air Voids	1.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435879

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp36/L4/3GH
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.236 Mg/m <sup>3</sup>
Natural Moisture Content	13.2 %
Dry Density	1.975 Mg/m <sup>3</sup>
Air Voids	1.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435880

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55186
Client Ref. :	Comp37/L4/2GH
Date and Time of Sampling:	28/09/2015
Date of Receipt at Lab:	08/10/2015
Date of Start of Test:	09/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A


**RESULTS:**

Bulk Density	2.222 Mg/m <sup>3</sup>
Natural Moisture Content	14.1 %
Dry Density	1.947 Mg/m <sup>3</sup>
Air Voids	1.5 %

**Comments**

Particle Density = 2.74 (Found)

Certificate  
Prepared by:-   
Meical Owen  
Assistant Laboratory Manager

Approved by: -   
Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435625

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp38/L9/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.209 Mg/m <sup>3</sup>
Natural Moisture Content	14.8 %
Dry Density	1.924 Mg/m <sup>3</sup>
Air Voids	1.3 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435626

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp39/L11/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.238 Mg/m <sup>3</sup>
Natural Moisture Content	12.8 %
Dry Density	1.984 Mg/m <sup>3</sup>
Air Voids	2.2 %

**Comments**

Particle Density = 2.74 (Found)


Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435627

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp40/L13/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.255 Mg/m <sup>3</sup>
Natural Moisture Content	14.0 %
Dry Density	1.978 Mg/m <sup>3</sup>
Air Voids	0.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager



Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435628

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp41/L15/3G
Date and Time of Sampling:	29/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.262 Mg/m <sup>3</sup>
Natural Moisture Content	12.3 %
Dry Density	2.014 Mg/m <sup>3</sup>
Air Voids	1.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435629

LS15 8GB

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Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp42/L18/4GH
Date and Time of Sampling:	30/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.269 Mg/m <sup>3</sup>
Natural Moisture Content	11.6 %
Dry Density	2.033 Mg/m <sup>3</sup>
Air Voids	2.2 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435630

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp43/L20/4GH
Date and Time of Sampling:	30/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.281 Mg/m <sup>3</sup>
Natural Moisture Content	11.9 %
Dry Density	2.038 Mg/m <sup>3</sup>
Air Voids	1.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435631

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp44/L22/4GH
Date and Time of Sampling:	30/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.278 Mg/m <sup>3</sup>
Natural Moisture Content	11.9 %
Dry Density	2.036 Mg/m <sup>3</sup>
Air Voids	1.5 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435632

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp45/L23/4GH
Date and Time of Sampling:	30/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.245 Mg/m <sup>3</sup>
Natural Moisture Content	12.6 %
Dry Density	1.994 Mg/m <sup>3</sup>
Air Voids	2.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435680

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp46/L24/4GH
Date and Time of Sampling:	30/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A


**RESULTS:**

Bulk Density	2.296 Mg/m <sup>3</sup>
Natural Moisture Content	12.1 %
Dry Density	2.048 Mg/m <sup>3</sup>
Air Voids	0.5 %

**Comments**

Particle Density = 2.74 (Found)

Certificate  
Prepared by:-   
Meical Owen  
Assistant Laboratory Manager

Approved by: -   
Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435681

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp47/L25/4GH
Date and Time of Sampling:	30/09/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.285 Mg/m <sup>3</sup>
Natural Moisture Content	11.9 %
Dry Density	2.042 Mg/m <sup>3</sup>
Air Voids	1.2 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435682

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp48/L26/4GH
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.250 Mg/m <sup>3</sup>
Natural Moisture Content	13.0 %
Dry Density	1.991 Mg/m <sup>3</sup>
Air Voids	1.5 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager



Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435683

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp49/L27/4GH
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.288 Mg/m <sup>3</sup>
Natural Moisture Content	12.5 %
Dry Density	2.034 Mg/m <sup>3</sup>
Air Voids	0.3 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435684

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp50/L28/4GH
Date and Time of Sampling:	02/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.282 Mg/m <sup>3</sup>
Natural Moisture Content	12.1 %
Dry Density	2.036 Mg/m <sup>3</sup>
Air Voids	1.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435685

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp51/L29/4GH
Date and Time of Sampling:	02/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.262 Mg/m <sup>3</sup>
Natural Moisture Content	12.1 %
Dry Density	2.018 Mg/m <sup>3</sup>
Air Voids	1.9 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435686

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp52/L30/4GH
Date and Time of Sampling:	05/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.237 Mg/m <sup>3</sup>
Natural Moisture Content	12.3 %
Dry Density	1.992 Mg/m <sup>3</sup>
Air Voids	2.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435687

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp53/L31/4GH
Date and Time of Sampling:	05/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.256 Mg/m <sup>3</sup>
Natural Moisture Content	10.7 %
Dry Density	2.038 Mg/m <sup>3</sup>
Air Voids	3.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435688

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp54/L32/5GH
Date and Time of Sampling:	05/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.273 Mg/m <sup>3</sup>
Natural Moisture Content	11.7 %
Dry Density	2.035 Mg/m <sup>3</sup>
Air Voids	1.9 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435689

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp55/L33/5GH
Date and Time of Sampling:	05/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.292 Mg/m <sup>3</sup>
Natural Moisture Content	12.3 %
Dry Density	2.041 Mg/m <sup>3</sup>
Air Voids	0.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435699

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp56/L34/5GH
Date and Time of Sampling:	05/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

<b>Bulk Density</b>	<b>2.274 Mg/m<sup>3</sup></b>
<b>Natural Moisture Content</b>	<b>11.3 %</b>
<b>Dry Density</b>	<b>2.043 Mg/m<sup>3</sup></b>
<b>Air Voids</b>	<b>2.4 %</b>

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager



Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 435700

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55256
Client Ref. :	Comp57/L35/5GH
Date and Time of Sampling:	05/10/2015
Date of Receipt at Lab:	12/10/2015
Date of Start of Test:	13/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.259 Mg/m <sup>3</sup>
Natural Moisture Content	12.2 %
Dry Density	2.013 Mg/m <sup>3</sup>
Air Voids	2.0 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436346

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp58/L1/3CF
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.253 Mg/m <sup>3</sup>
Natural Moisture Content	11.8 %
Dry Density	2.015 Mg/m <sup>3</sup>
Air Voids	2.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436347

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp59/L1/3CF
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.244 Mg/m <sup>3</sup>
Natural Moisture Content	11.1 %
Dry Density	2.020 Mg/m <sup>3</sup>
Air Voids	3.9 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436348

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp60/L2/3CF
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.204 Mg/m <sup>3</sup>
Natural Moisture Content	12.6 %
Dry Density	1.957 Mg/m <sup>3</sup>
Air Voids	3.9 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436350

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp61/L2/3CF
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.303 Mg/m <sup>3</sup>
Natural Moisture Content	10.2 %
Dry Density	2.090 Mg/m <sup>3</sup>
Air Voids	2.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436352

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp62/L3/3CF
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.295 Mg/m <sup>3</sup>
Natural Moisture Content	11.8 %
Dry Density	2.053 Mg/m <sup>3</sup>
Air Voids	0.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436353

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp63/L3/3CF
Date and Time of Sampling:	01/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.245 Mg/m <sup>3</sup>
Natural Moisture Content	10.9 %
Dry Density	2.024 Mg/m <sup>3</sup>
Air Voids	4.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436354

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Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp64/L4/3CF
Date and Time of Sampling:	02/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.268 Mg/m <sup>3</sup>
Natural Moisture Content	12.6 %
Dry Density	2.014 Mg/m <sup>3</sup>
Air Voids	1.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager



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4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436355

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Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp65/L4/3CF
Date and Time of Sampling:	02/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.253 Mg/m <sup>3</sup>
Natural Moisture Content	10.9 %
Dry Density	2.032 Mg/m <sup>3</sup>
Air Voids	3.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
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4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436357

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp66/L36/5GH
Date and Time of Sampling:	06/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.281 Mg/m <sup>3</sup>
Natural Moisture Content	11.9 %
Dry Density	2.038 Mg/m <sup>3</sup>
Air Voids	1.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

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Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436360

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp67/L36/5GH
Date and Time of Sampling:	06/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.303 Mg/m <sup>3</sup>
Natural Moisture Content	11.7 %
Dry Density	2.062 Mg/m <sup>3</sup>
Air Voids	0.6 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436361

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp68/L37/5GH
Date and Time of Sampling:	06/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.298 Mg/m <sup>3</sup>
Natural Moisture Content	10.7 %
Dry Density	2.076 Mg/m <sup>3</sup>
Air Voids	2.0 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

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Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436362

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp69/L37/5GH
Date and Time of Sampling:	06/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.256 Mg/m <sup>3</sup>
Natural Moisture Content	11.3 %
Dry Density	2.027 Mg/m <sup>3</sup>
Air Voids	3.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



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Approved by: -



Eric Goulden  
Technical Manager

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Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436365

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp70/L38/5GH
Date and Time of Sampling:	06/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.246 Mg/m <sup>3</sup>
Natural Moisture Content	12.3 %
Dry Density	2.000 Mg/m <sup>3</sup>
Air Voids	2.4 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

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4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436367

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp71/L39/5GH
Date and Time of Sampling:	08/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.260 Mg/m <sup>3</sup>
Natural Moisture Content	12.0 %
Dry Density	2.018 Mg/m <sup>3</sup>
Air Voids	2.1 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

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4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436369

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp72/L40/5GH
Date and Time of Sampling:	08/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.212 Mg/m <sup>3</sup>
Natural Moisture Content	11.5 %
Dry Density	1.984 Mg/m <sup>3</sup>
Air Voids	4.8 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager



Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436373

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp73/L1/3GF
Date and Time of Sampling:	08/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.223 Mg/m <sup>3</sup>
Natural Moisture Content	12.0 %
Dry Density	1.985 Mg/m <sup>3</sup>
Air Voids	3.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436375

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp74/L1/3GF
Date and Time of Sampling:	08/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.288 Mg/m <sup>3</sup>
Natural Moisture Content	11.4 %
Dry Density	2.054 Mg/m <sup>3</sup>
Air Voids	1.6 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436378

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp75/L2/3GF
Date and Time of Sampling:	09/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.310 Mg/m <sup>3</sup>
Natural Moisture Content	11.4 %
Dry Density	2.074 Mg/m <sup>3</sup>
Air Voids	0.7 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436381

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp76/L2/3GF
Date and Time of Sampling:	09/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.221 Mg/m <sup>3</sup>
Natural Moisture Content	13.5 %
Dry Density	1.957 Mg/m <sup>3</sup>
Air Voids	2.2 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436384

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp77/L1/4B
Date and Time of Sampling:	08/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.282 Mg/m <sup>3</sup>
Natural Moisture Content	10.8 %
Dry Density	2.060 Mg/m <sup>3</sup>
Air Voids	2.6 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436385

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp78/L3/3CF
Date and Time of Sampling:	09/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A


**RESULTS:**

Bulk Density	2.310 Mg/m <sup>3</sup>
Natural Moisture Content	11.1 %
Dry Density	2.079 Mg/m <sup>3</sup>
Air Voids	1.0 %

**Comments**

Particle Density = 2.74 (Found)

Certificate  
Prepared by:-   
Meical Owen  
Assistant Laboratory Manager

Approved by: -   
Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436387

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp79/L4/4B
Date and Time of Sampling:	12/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.273 Mg/m <sup>3</sup>
Natural Moisture Content	11.4 %
Dry Density	2.040 Mg/m <sup>3</sup>
Air Voids	2.3 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager

Stratus Environmental Limited  
4245 Park Approach  
Thorpe Park  
Leeds

Date: 20 November 2015  
Test Report Ref: STR 436388

LS15 8GB

Page 1 of 1

Contract: Hafod Landfill - Cell 4 Phase 1

**LABORATORY TEST REPORT**

**TEST REQUIREMENTS:**

To determine the in-situ density of a soil sample - Core cutter method in accordance with **BS 1377: Part 9 : 1990 Clause 2.4**

**SAMPLE DETAILS:**

Certificate of sampling received:	No
Laboratory Ref. No:	S55323
Client Ref. :	Comp80/L4/3CF
Date and Time of Sampling:	12/10/2015
Date of Receipt at Lab:	15/10/2015
Date of Start of Test:	16/10/2015
Sampling Location:	Unknown
Name of Source:	Unknown
Method of Sampling:	Core Cutter
Sampled By:	Client
Material Description:	Red/brown sandy very silty CLAY
Target Specification:	N/A

**RESULTS:**

Bulk Density	2.244 Mg/m <sup>3</sup>
Natural Moisture Content	11.6 %
Dry Density	2.011 Mg/m <sup>3</sup>
Air Voids	3.3 %

**Comments**

Particle Density = 2.74 (Found)

Certificate

Prepared by:-



Meical Owen  
Assistant Laboratory Manager

Approved by: -



Eric Goulden  
Technical Manager