CONTRACT NO GE/2011/16
PROVISION OF SOIL AND ROCK TESTING SERVICES
FOR PUBLIC WORKS LABORATORIES
NT WEST (TERM CONTRACT)
SERVICE ORDER NO. GE/2011/16.74
COMPILATION OF FINAL LABORATORY TESTING REPORT

AGREEMENT NO. CE 61/2007 (CE)
NORTH EAST NEW TERRITORIES NEW DEVELOPMENT AREAS
PLANNING AND ENGINEERING STUDY – INVESTIGATION
G.I.W.O. NO. GE/2010/01.38
REQUEST FOR SPLITTING OF MAZIER SAMPLES
TAKEN FROM GI FIELDWORK IN KWU TUNG
LABORATORY TESTING

CONTRACTOR
GAMMON CONSTRUCTION LIMITED
28th Floor Devon House
Taikoo Place
979 King’s Road
Hong Kong

CUSTOMER
GEOTECHNICAL ENGINEERING OFFICE
Civil Engineering & Development Department
Public Works Central Laboratory
Cheung Yip Street
Kowloon Bay
Kowloon

Report No : J3387-16.74 Rev 0
06/03/2012
INTRODUCTION

This document contains a compilation of reports presented in sequential order following the original works Instruction.

The laboratory did not know the sampling history of the samples prior to receipt at the laboratory. The results presented relate only to the samples in the condition as received.

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In order to avoid the possibility of misrepresented results being used, reproduction of test certificates/reports in part shall not be permitted.

Reliance should only be given to test reports given in the original or certified true copy of test certificates/reports.
<table>
<thead>
<tr>
<th>Section</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td><strong>Contract Data Summary</strong></td>
</tr>
<tr>
<td>1.1</td>
<td>Contract Data Summary</td>
</tr>
<tr>
<td>2.0</td>
<td><strong>NON HOKLAS Test Reports</strong></td>
</tr>
<tr>
<td>2.1</td>
<td>Photographic Records for Longitudinal Splitting of Undisturbed Sample</td>
</tr>
</tbody>
</table>

Certified accurate and complete

Approved Signatory: J. Fowler / W C Lau
(Laboratory Quality Manager / Deputy Laboratory Manager)

Report No: J3387-16.74 Rev 0

06/03/2012
Section 1
Contract Data Summary
**Contract Data Summary**

**Project Name & No.**

**Date:** 27/02/2012 to 14/03/2012

**Site Name**

**Customer** CEDD

**Official Only**

**G.E.O. Data Bank No.**

**File Ref.** GCST2/A2/1116.74

---

### Field Work Summary

- **Drillholes Total No.:**
- **Method:**
- **Date:**

- **Pits / Trenches / Caissons:**

- **Probes:**

- **Piezometers:**

- **Insitu Tests:**
- **No.**
- **Types**

- **Geophysics:**
- **Trenches**
- **Type**

---

### Laboratory Testing Summary

<table>
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<tr>
<th>Test Type</th>
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<th>Date</th>
<th>27/02/2012 to 06/03/2012</th>
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<tr>
<td>Soil</td>
<td>Physical Properties</td>
<td>LL, PL</td>
<td>PSD</td>
<td>MC</td>
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<td></td>
<td>Strength Tests</td>
<td>CU, CD</td>
<td>UU</td>
<td>Shear Box</td>
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<td>Compaction &amp; CBR Tests</td>
<td>Standard, Modified</td>
<td>CBR</td>
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<td></td>
<td>Oedometer &amp; Chem Tests</td>
<td>Cv, k</td>
<td>Mass Loss</td>
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<td>Chemical Tests</td>
<td>pH</td>
<td>Sulphate</td>
<td>Chloride, Organic</td>
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<td>Other Tests</td>
<td>Resistivity</td>
<td>Redox</td>
<td>Carbonate, Split, 23</td>
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**Location Plan**

- **SCALE 1:**
- **20 000**
- **Derived from:**
- **20 000 Sheet**
- **5 000**
- **5 000 Sheet**

**Location Plan is not available**

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<table>
<thead>
<tr>
<th>Contractor</th>
<th>Laboratory</th>
<th>GEOTECHNICAL ENGINEERING OFFICE</th>
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<tr>
<td>Fugro Geotechnical Services Ltd</td>
<td>Gammon Construction Ltd</td>
<td>CIVIL ENGINEERING AND DEVELOPMENT DEPARTMENT</td>
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<td>GE/2010/01.38</td>
<td>GE/2011/16.74</td>
<td>HONG KONG</td>
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</table>
Section 2
NON HOKLAS Test Reports
Section 2.1
Photographic Records for Longitudinal Splitting of Undisturbed Sample
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Sample No.: KTN-ASBH offsite (a)

Borehole No.: 327

Description: Yellowish brown, slightly gravelly, slightly sandy SILT/CLAY

Sample Depth m: 1.50 - 2.50

Specimen Depth m: 1.50 - 2.50

Report No.: J3387-16.74

Contract No.: CE 2011/6

Service Order: CE 2011/6.74

Compiled by: W. S. Wal.

Checked by: H. W. Claude

Customer: CEDD

Project: Agreement No. CE 612007 (CE) North East New Territories New Development Areas Planning and Engineering Study - Investigation
Borehole No.: KTN-ASBH offsite (a)  
Sample No.:  
Sample Depth m: 2.60 - 3.60  
Specimen Depth m: 2.60 - 3.60

Description: Reddish brown, slightly gravelly, slightly sandy SILT/CLAY

Compiled by W S Wat  
Customer: CEDD  

Checked by H W Chung  
Job No.: J3387  
Planning and Engineering Study – Investigation

Contract No.: GE/2011/16  
Service Order: GE/2011/16.74

Report No.: J3387-16.74
**LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE**

<table>
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<tr>
<th>Borehole No.:</th>
<th>KTN-ASBH onsite (a)</th>
<th>Sample No.:</th>
<th>Sample Depth m:</th>
<th>Specimen Depth m:</th>
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<tbody>
<tr>
<td>Description:</td>
<td>Yellowish brown, slightly gravelly, sandy SILT/CLAY</td>
<td></td>
<td>3.80 - 4.80</td>
<td>3.80 - 4.80</td>
</tr>
</tbody>
</table>

Compiled by: W S Wat  
Checked by: H W Chung  
Customer: CEDD  
Planning and Engineering Study – Investigation  
Contract No.: GE/2011/16  
Service Order: GE/2011/16.74

Report No.: J3387-16.74  
Form: MR001.6.1 / May.29.03 / Issue 1 / Rev 0
### LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

<table>
<thead>
<tr>
<th>Borehole No.:</th>
<th>KTN-ASBH offsite (a)</th>
<th>Sample No.:</th>
<th>Sample Depth m:</th>
<th>Specimen Depth m:</th>
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<tr>
<td>Description:</td>
<td>Pinkish brown, slightly gravelly, slightly sandy SILT/CLAY</td>
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**Compiled by**

<table>
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<th>W S Wat</th>
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**Customer:** CEDD  
**Project:** Agreement No. CE 61/2007 (CE) North East New Territories New Development Areas  
**Planning and Engineering Study – Investigation**

**Checked by**

| H W Chung |

**Job No.:** J3387  
**Contract No.:** GE/2011/16  
**Service Order:** GE/2011/16.74

---

*Form: MR002.6.1 / May 29, 2003 / Issue 1 / Rev 0*
# Longitudinal Splitting of Undisturbed Sample

## Description:
Reddish brown, slightly gravelly, slightly sandy SILT/CLAY

<table>
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<tr>
<th>Borehole No.:</th>
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<th>Sample No.:</th>
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<th>Specimen Depth m:</th>
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Compiled by W S Wat

Customer: CEDD
Planning and Engineering Study – Investigation

Checked by H W Chung

Job No.: J3387

Report No.: J3387-16.74

Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0
**LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE**

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<th>Borehole No.:</th>
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<th>Specimen Depth m:</th>
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<tbody>
<tr>
<td>Description:</td>
<td>Reddish brown, slightly gravelly, slightly sandy SILT/CLAY</td>
<td></td>
<td></td>
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</table>

Compiled by: W S Wat  
Customer: CEDD  
Job No.: J3387  
Contract No.: GE/2011/16  
Service Order: GE/2011/16.74  
Report No.: J3387-16.74

Form: MR002.6.1 / May 29, 2003 / Issue 1 / Rev 0
LONGITUDINAL SPLITTING
OF UNDISTURBED SAMPLE

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<tr>
<th>Borehole No.:</th>
<th>KTN-ASBH offsite (a)</th>
<th>Sample No.:</th>
<th>Sample Depth m: 8.30 - 9.30</th>
<th>Specimen Depth m: 8.30 - 9.30</th>
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<tbody>
<tr>
<td>Description:</td>
<td>8.30 - 8.45m Reddish brown, slightly gravelly, slightly sandy SILT/CLAY</td>
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<tr>
<td></td>
<td>8.45 - 9.30m Brown, slightly silty/clayey, sandy GRAVEL</td>
<td></td>
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Compiled by: W S Wat  
Checked by: H W Chung  
Customer: CEDD  
Contract No.: GE/2011/16  
Service Order: GE/2011/16.74  
Report No.: J3387-16.74

Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0
**LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE**

<table>
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<tr>
<th>Borehole No.</th>
<th>KTN-ASBH offsite (a)</th>
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<tr>
<td>Sample No.</td>
<td>Sample Depth m: 9.40 - 9.80</td>
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<tr>
<td>Description</td>
<td>Brown, slightly silty/clayey, sandy GRAVEL</td>
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<td>Specimen Depth m</td>
<td>9.40 - 9.80</td>
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Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0
### Longitudinal Splitting of Undisturbed Sample

<table>
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<th>Sample No.</th>
<th>Sample Depth m</th>
<th>Specimen Depth m</th>
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<tbody>
<tr>
<td>KTN-ASBH offsite (a)</td>
<td>11.80 - 11.95m Yellowish brown, slightly silty/clayey, very sandy GRAVEL</td>
<td>11.80 - 12.80</td>
<td>11.80 - 12.80</td>
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<tr>
<td></td>
<td>11.95 - 12.80m Yellowish brown, slightly gravelly, sandy SILT/CLAY</td>
<td></td>
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</tbody>
</table>

Compiled by: W S Wat
Customer: CEDD
Planning and Engineering Study – Investigation

Checked by: H W Chung
Job No.: J3387
Contract No.: GE/2011/16
Service Order: GE/2011/16.74

Report No.: J3387-16.74

Form: MR002.6.1 / May 29.03 / Issue 1 / Rev 0
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH offsite (a)  
Sample No.:  
Sample Depth m: 12.90 - 13.90  
Specimen Depth m: 12.90 - 13.90

Description:  
13.30 - 13.60m Greyish brown, slightly gravelly, slightly sandy SILT/CLAY

13.60 - 13.90m Yellowish brown, slightly sandy SILT/CLAY

Compiled by: W S Wat  
Customer: CEDD  
Planning and Engineering Study – Investigation

Checked by: H W Chung  
Job No.: J3387  
Contract No.: GE/2011/16  
Service Order: GE/2011/16.74

Report No.: J3387-16.74
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

<table>
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<th>Borehole No.:</th>
<th>KTN-ASBH offsite (a)</th>
<th>Sample No.:</th>
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<tbody>
<tr>
<td>Description:</td>
<td>Yellowish brown, slightly sandy SILT/CLAY</td>
<td>Sample Depth m:</td>
<td>14.00 - 15.00</td>
<td>Specimen Depth m:</td>
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</tbody>
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Compiled by: W S Wat
Customer: CEDD
Checked by: H W Chung
Job No.: J3387

Contract No.: GE/2011/16
Service Order: GE/2011/16.74
Report No.: J3387-16.74

Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH offsite (a)  
Sample No.:  
Sample Depth m: 16.20 - 17.20  
Specimen Depth m: 16.20 - 17.20

Description: Reddish brown, slightly gravelly, slightly sandy SILT/CLAY

Compiled by W S Wat  
Checked by H W Chung  

Customer: CEDD  
Planning and Engineering Study – Investigation  
Job No.: 33387

Contract No.: GE/2011/16  
Service Order: GE/2011/16.74

Report No.: J3387-16.74
**LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE**

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<th>Borehole No.:</th>
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<th>Sample No.:</th>
<th>Sample Depth m:</th>
<th>Specimen Depth m:</th>
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<tbody>
<tr>
<td>Description:</td>
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Compiled by W S Wat

Checked by H W Chung

Customer: CEDD  
Planning and Engineering Study – Investigation

Contract No.: GE/2011/16  
Service Order: GE/2011/16.74

Report No.: J3387-16.74  
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LONGITUDINAL SPLITTING
OF UNDISTURBED SAMPLE

Borhole No.: KTN-ASBH offsite (a)
Sample No.: 
Sample Depth m: 18.50 - 19.50
Specimen Depth m: 18.50 - 19.50

Description: Greyish brown, slightly gravelly, slightly sandy SILT/CLAY

Compiled by W S Wat
Checked by H W Chung
Customer: CEDD
Planning and Engineering Study – Investigation
Job No.: J3387
Contract No.: GE/2011/16
Service Order: GE/2011/16.74

Page 1 of 1
LONGITUDINAL SPLITTING
OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH offsite (a)  Sample No.:  

Sample Depth m: 19.60 - 20.60  Specimen Depth m: 19.60 - 20.60

Description: Orangish brown, slightly gravelly, slightly sandy SILT/CLAY

Compiled by W S Wat  
Checked by H W Chung  

Customer: CEDD  
Planning and Engineering Study – Investigation

Contract No.: GE/2011/16  
Service Order: GE/2011/16.74

Report No.: J3387-16.74

Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0
**LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE**

![Image of undisturbed sample split]

**Borehole No.:** KTN-ASBH offsite (a)  
**Sample No.:**  
**Sample Depth m:** 20.80 - 21.80  
**Specimen Depth m:** 20.80 - 21.80  

**Description:** Orangish brown, slightly gravelly, slightly sandy SILT/CLAY

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<td>Job No.: J3387</td>
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<td>Report No.: J3387-16.74</td>
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</table>
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH offsite (a)  Sample No.:  Sample Depth m: 22.00 - 23.00  Specimen Depth m: 22.00 - 23.00

Description: Orangish brown, slightly gravelly, slightly sandy SILT/CLAY

Checked by H W Chung  Planning and Engineering Study – Investigation  Job No.: J3387

LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH offsite (a)  
Sample No.: 
Sample Depth m: 23.10 - 24.10  
Specimen Depth m: 23.10 - 24.10

Description: Greyish brown, slightly gravelly, slightly sandy SILT/CLAY

Compiled by W S Wat  
Checked by H W Chung

Customer: CEDD  
Planning and Engineering Study – Investigation

Report No.: J3387-16.74  
Contract No.: GE/2011/16  
Service Order: GE/2011/16.74
**LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE**

**Description:** Greyish brown, slightly gravelly, slightly sandy SILT/CLAY

<table>
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<th>Borehole No.:</th>
<th>KTN-ASBH offsite (a)</th>
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<th>Specimen Depth m:</th>
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<tbody>
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<td>24.20 - 25.20</td>
<td>24.20 - 25.20</td>
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**Compiled by:** W S Wat  
**Customer:** CEDD  
**Project:** Agreement No. CE 61/2007 (CE) North East New Territories New Development Areas  
**Checked by:** H W Chung  
**Job No.:** J3387

**Report No.:** J3387-16.74

Form: MR002.6.1 / May 29, 2003 / Issue 1 / Rev 0
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH off site (a)  
Sample No.:  
Sample Depth m: 25.30 - 26.30  
Specimen Depth m: 25.30 - 26.30

Description: Greyish brown, slightly silty/clayey, very sandy GRAVEL

Compiled by W S Wat
Checked by H W Chung

Customer: CEDD
Job No.: J3387

Contract No.: GE/2011/16
Service Order: GE/2011/16.74

Report No.: J3387-16.74
Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH offsite (a)  
Sample No.:  
Sample Depth m: 26.50 - 27.50  
Specimen Depth m: 26.50 - 27.50

Description: Greyish brown, slightly silty/clayey, very sandy GRAVEL

Compiled by W S Wat
Checked by H W Chung

Customer: CEDD  
Planning and Engineering Study – Investigation

Contract No.: GE/2011/16  
Service Order: GE/2011/16.74

Report No.: J3387-16.74

Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0
LONGITUDINAL SPLITTING OF UNDISTURBED SAMPLE

Borehole No.: KTN-ASBH offsite (a)  Sample No.:  Sample Depth m: 29.50 - 30.50  Specimen Depth m: 29.50 - 30.50

Description: Greyish brown, slightly silty/clayey, very sandy GRAVEL

Compiled by W S Wat  Customer: CEDD
Checked by H W Chung

Planning and Engineering Study – Investigation

Contract No.: GE/2011/16  Service Order: GE/2011/16.74

Report No.: J3387-16.74

Form: MR002.6.1 / May.29.03 / Issue 1 / Rev 0