ATTACHMENT A2
TEST PIT LOGS AND PHOTOGRAPHS
Excavation Log

<table>
<thead>
<tr>
<th>Method</th>
<th>Support</th>
<th>Notes</th>
<th>Depth (m)</th>
<th>Graphic Log</th>
<th>Classification Symbol</th>
<th>Notes</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>B A C K H O E</td>
<td>U N S U P P O R T E D</td>
<td>Notes, samples, tests, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>soil type: plasticity or particle characteristics, colour, secondary and minor components</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>moisture condition/consistency/density index</td>
</tr>
<tr>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Notes</th>
<th>Classification Symbol</th>
<th>Notes</th>
<th>Structure and additional observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>GW</td>
<td>FILL: Dark grey, fine to coarse, predominantly dolerite GRAVEL; gravel fines upwards.</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>SM</td>
<td>FILL: Yellow-brown, slightly clayey silt SAND with some fine gravel, unit varies in thickness from 100mm to 800mm</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>GC</td>
<td>FILL: Yellow-brown and dark grey silty gravelly SAND with some cobbles and boulders; predominantly subangular to angular dolerite and volcanic breccia, also occasional boulders up to 1.0m of subangular sandstone.</td>
<td>D</td>
<td>Sidewalls collapsing in this unit</td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
<td>PSD, pH = 8.1, Sulphate = 280mg/kg</td>
</tr>
<tr>
<td>4.0</td>
<td>GP</td>
<td>FILL: Dark grey sandy GRAVEL with some subangular to angular dolerite and volcanic breccia cobbles and boulders.</td>
<td>D</td>
<td>Sidewalls collapsing in this unit</td>
</tr>
<tr>
<td>5.5</td>
<td></td>
<td>End of pit at 5.5m (machine limitation).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

North face of pit

Key
1. Method
   - N: Natural Exposure
   - E: Existing Excavation
   - BH: Backhoe bucket
   - B: Bulldozer Blade
   - R: Ripper
2. Support
   - T: Timbering
3. Penetration
   - 1: No Resistance
   - 2: Refusal
4. Notes (samples and tests)
   - U50: undisturbed sample 50mm diameter
   - D: disturbed sample
   - N: standard penetration test
5. Classification Symbols
   - based on UCS
6. Moisture
   - D: dry
   - M: moist
   - W: wet
7. Consistency/density Index
   - VS: very soft
   - S: soft
   - F: firm
   - St: Stiff
   - Vst: very stiff
   - H: hard
   - Fb: Friable
   - Vl: very loose
   - L: loose
   - MD: medium
   - D: dense
   - VD: very dense

Pit No: TP1
Sheet: 1 of 1
Job No: PSM1059
PSM Test Pits 11-12-10 06 TP1
TP1: Sidewall

TP1: Spoil
Excavation Log

Pells Sullivan Meynink Pty Ltd
Engineering Consultants
Rock-Soil-Water
A.C.N. 061447621

Sheet: 1 of 1
Job No: PSM1059

Project: Redevelopment of Hornsby Quarry
Pit location: Hard standing below crusher plant

Pit No: TP2
Pit commenced: 11-Oct-06
Pit complete: 11-Oct-06
Supervised by: PC
Checked by: DA

Equipment type and model: Komatsu PC200
RL. surface: 152.9m AHD
Excavation dimensions: 5.2mL x 1.4mW x 2.5mD
Datum: 6269525.7N, 323086.6E

Notes
Materials

<table>
<thead>
<tr>
<th>Method penetration</th>
<th>Notes samples, tests, etc.</th>
<th>Depth (m)</th>
<th>graphic log</th>
<th>Classification symbol</th>
<th>soil type: plasticity or particle characteristics, colour, secondary and minor components</th>
<th>Moisture condition</th>
<th>Consistency/density index</th>
<th>UCS; hand penetrometer (kPa)</th>
<th>Structure and additional observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>GW</td>
<td>FILL: Dark grey, fine to coarse, predominantly dolerite GRAVEL; gravel fines upwards.</td>
<td>D</td>
<td>1.2</td>
<td></td>
<td></td>
<td>at 0.5m depth, rusty steel water pipe intersected in eastern side of pit; water seeping out of pipe joint at a rate of about 3 litres/sec; pipe connected to crusher plant.</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>GC</td>
<td>FILL: Yellow-brown and dark grey silty gravelly SAND with some cobbles and boulders; gravel, cobbles and boulders predominantly subangular to angular dolerite and volcanic breccia, also occasional boulders up to 0.7m of subangular sandstone.</td>
<td>D</td>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SANDSTONE: Light orange-yellow, highly weathered, very low to low strength</td>
<td>D</td>
<td>2.5</td>
<td></td>
<td></td>
<td>End of pit at 2.5m; refusal on sandstone.</td>
</tr>
</tbody>
</table>

Key

1 Method
N Natural Exposure
E Existing Excavation
BH Backhoe bucket
B Bulldozer Blade
R Ripper

2 Support
T Timbering

3 Penetration
1 No Resistance
2 Refusal

4 Notes (samples and tests)
U50 undisturbed sample
50mm diameter
D disturbed sample
Standard penetration test
N' SPT + sample
Ncone cone penetrometer

5 Classification Symbols
based on UCS

6 Moisture
D dry
M moist
W wet

7 Consistency/ density Index
VS very soft
S soft
F firm
St Stiff
Vst very stiff
H hard
Fs Friable
Vi very loose
L loose
MD medium
D dense
VD very dense

South face of pit
TP2: Sidewall

TP2: Spoil
**Excavation Log**

**Pells Sullivan Meynink Pty Ltd**

**Engineers**: Pells Sullivan Meynink Pty Ltd

**A.C.N.**: 061447621

**Sheet**: 1 of 1

**Job No**: PSM1059

**Pit No**: TP3

**Pit commenced**: 11-Oct-06

**Pit complete**: 11-Oct-06

**Supervised by**: PC

**Checked by**: DA

**Project**: Redevelopment of Hornsby Quarry

**Pit location**: Hard standing below crusher plant

**Equipment type and model**: Komatsu PC200

**Excavation dimensions**: 5.5mL x 1.5mW x 4.0mD

**R.L. surface**: 153.5mAHD

**Datum**: 6269509.8N, 323130.7E

---

### Notes

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>graphic log</th>
<th>classification symbol</th>
<th>soil type: plasticity or particle characteristics, colour, secondary and minor components</th>
<th>moisture condition</th>
<th>consistency/density index</th>
<th>UCS; hand penetrometer (kPa)</th>
<th>Structure and additional observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7</td>
<td></td>
<td>GW</td>
<td>FILL: Dark grey, fine to coarse, predominantly dolerite GRAVEL; gravel fines upwards.</td>
<td>D</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0</td>
<td></td>
<td>GC</td>
<td>FILL: Yellow-brown and dark grey clayey sandy GRAVEL with some cobbles and boulders; gravel, cobbles and boulders predominantly subangular to angular HW-MW dolerite and volcanic breccia up to 0.7m.</td>
<td>D</td>
<td></td>
<td></td>
<td>Sidewalls collapsing in this unit</td>
</tr>
<tr>
<td>2.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>End of pit at 4.0m; Pit terminated because of collapsing sidewalls.</td>
</tr>
</tbody>
</table>

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**Key**

1. **Method**
   - N: Natural Exposure
   - E: Existing Excavation
   - BH: Backhoe bucket
   - B: Bulldozer Blade
   - R: Ripper

2. **Support**
   - T: Timbering

3. **Penetration**
   - 1: No Resistance
   - 2: 3 Refusal

4. **Notes (samples and tests)**
   - U50: undisturbed sample
   - 50mm diameter
   - D: disturbed sample
   - N: standard penetration test
   - figure = result
   - N* SPT + sample
   - Nc: cone penetrometer

5. **Classification Symbols**
   - based on UCS

6. **Moisture**
   - D: dry
   - M: moist
   - W: wet

7. **Consistency/density Index**
   - VS: very soft
   - S: soft
   - F: firm
   - St: Stiff
   - Vst: very stiff
   - H: hard
   - Fb: Friable
   - Vl: very loose
   - L: loose
   - MD: medium
   - D: dense
   - VF: very dense

---

Photo of northern pit face; note the collapsing sidewalls.
TP3: Pit – note sidewalls collapsing

TP3: Spoil
project: Redevelopment of Hornsby Quarry
pit location: South western fill area

equipment type and model: Komatsu PC200
excavation dimensions: 5.1mL x 1.4mW x 4.5mD
R.L. surface: 114.0mAHD
datum: 626986.8N, 322871.2E

Notes Materials
Method
penetration
support
Notes
depth (m)
graphic log
classification symbol
soil type: plasticity or particle characteristics, colour, secondary and minor components

Materials

structure and additional observations

123
1 No Resistance
2 Refusal

Key

1 Method
N Natural Exposure
E Existing Excavation
BH Backhoe bucket
B Bulldozer Blade
R Ripper

2 Support
T Timbering

3 Penetration
1 No Resistance
2
3 Refusal

4 Notes (samples and tests)
U50 undisturbed sample
N disturbed sample
SPT standard penetration test
Nc cone penetrometer

5 Classification Symbols
based on UCS

6 Moisture
D dry
M moist
W wet

7 Consistency/ density Index
VS very soft
S soft
F firm
St stiff
Vst very stiff
H hard
Fs Friable
Vl very loose
L loose
MD medium
D dense
VD very dense
TP4: Sidewall

TP4: Spoil
Excavation Log

Pells Sullivan Meynink Pty Ltd
Engineering Consultants
Rock-Soil-Water

Pit No: TP5
Sheet: 1 of 1
Job No: PSM1059

Project: Redevelopment of Hornsby Quarry
Pit Location: South western fill area

Pit commenced: 11-Oct-06
Pit complete: 11-Oct-06
Supervised by: PC
Checked by: DA

Equipment type and model: Komatsu PC200
R.L. surface: 111.4mAHD
Datum: 6269621.2N, 322867.4E

Excavation dimensions: 5.2mL x 1.4mW x 3.8mD

Materials

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Notes</th>
<th>Soil type: plasticity or particle characteristics, colour, secondary and minor components</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>OL</td>
<td>TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders</td>
</tr>
<tr>
<td>1.0</td>
<td>GC</td>
<td>FILL: Yellow-brown and dark grey daceous sandy cobbly GRAVEL with some boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FR dolerite and volcanic breccia up to 1.0m.</td>
</tr>
<tr>
<td>2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.8</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Support

1 Method
N Natural Exposure
E Existing Excavation
BH Backhoe bucket
B Bulldozer blade
R Ripper

2 Support
T Timbering

3 Penetration
1 No Resistance
2 Refusal

4 Notes (samples and tests)
U50 undisturbed sample
50mm diameter
D disturbed sample
N standard penetration test
\( N^* \) SPT + sample
Nc cone penetrometer

5 Classification Symbols
based on UCS

6 Moisture
D dry
M moist
W wet

7 Consistency/density Index
VS very soft
S soft
F firm
St stiff
Vst very stiff
H hard
Fs Friable
V very loose
L loose
MD medium
D dense
VD very dense

Structure and additional observations

Steel cables in fill (refer to photo below)

Photo of eastern face of pit
TP5: Sidewall

TP5: Spoil
### Excavation Log

**Pells Sullivan Meynik Pty Ltd**

**Engineering Consultants**

**Rock-Soil-Water**

**Sheet 1 of 1**

**Job No:** PSM1059

**Pit No:** TP6

**Project:** Redevelopment of Hornsby Quarry

**Pit Location:** Fill slope on southern bank of Old Mans Creek

**Equipment type and model:** Komatsu PC200

**Excavation dimensions:** 5.3mL x 1.4mW x 4.7mD

**Datum:** 6269661.7N, 322824.1E

**R.L. Surface:** 97.7mAH

**pit commenced:** 11-Oct-06

**pit complete:** 11-Oct-06

**supervised by:** PC

**checked by:** DA

---

### Materials

<table>
<thead>
<tr>
<th>soil type: plasticity or particle characteristics, colour, secondary and minor components</th>
<th>moisture condition</th>
<th>consistency/density index</th>
<th>UCS; hand penetrometer (kPa)</th>
<th>Structure and additional observations</th>
</tr>
</thead>
</table>

---

### Notes

**Depth (m)**

<table>
<thead>
<tr>
<th>Graph log classification symbol</th>
<th>Notes (samples, tests, etc.)</th>
<th>Support</th>
</tr>
</thead>
</table>

---

#### Key

1. **Method**
   - N: Natural Exposure
   - E: Existing Excavation
   - BH: Backhoe bucket
   - B: Bulldozer Blade
   - R: Ripper
2. **Support**
   - T: Timbering
3. **Penetration**
   - 1: No Resistance
   - 2: Refusal
4. **Notes (samples and tests)**
   - U50: undisturbed sample
   - N: disturbed sample
   - SPT: standard penetration test
   - NC: cone penetrometer
5. **Classification Symbols**
   - based on UCS
6. **Moisture**
   - D: dry
   - M: moist
   - W: wet
7. **Consistency/density Index**
   - VS: very soft
   - S: soft
   - F: firm
   - St: Stiff
   - Vst: very stiff
   - H: hard
   - Fs: Friable
   - Vi: very loose
   - M: medium
   - MD: dense
   - D: dense
   - VD: very dense

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**Photo of northern face of pit**

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**Notes:**

- Orange-brown and dark gray clayey gravelly cobbley SAND with some boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FF dolerite and volcanic breccia up to 0.5m.
- Numerous articles of rubbish found in pit including an old air conditioner unit, car seat, old timber, scrap metal, old beer cans (with ring tab).
- Side walls collapsing slightly
- PSD, pH = 7.7, sulphate = <100mg/kg

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**End of pit at 4.7m (machine limitation).**

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TP6: Sidewall

TP6: Spoil – note the rubbish
# Excavation Log

**Project:** Redevelopment of Hornsby Quarry  
**Pit Location:** Fill slope on southern bank of Old Mans Creek

**Equipment Type and Model:** Komatsu PC200  
**Excavation Dimensions:** 5.1mL x 1.5mW x 3.0mD  
**R.L. Surface:** 93.1mAH

### Materials

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.</td>
</tr>
<tr>
<td>1.0</td>
<td>GC FILL: Orange-brown and dark grey clayey gravelly cobbly SAND with some boulders; gravel, cobbles and boulders predominantly subrounded to angular HW-FR dolerite and volcanic breccia up to 0.5m.</td>
</tr>
<tr>
<td>2.0</td>
<td>GC FILL: As above, but boulders predominantly FR, very strong, angular dolerite boulders up to 0.75m.</td>
</tr>
<tr>
<td>3.0</td>
<td>End of pit at 3.0m; refusal on large boulders</td>
</tr>
</tbody>
</table>

### Structure and Additional Observations

- Side walls collapsing slightly
- No man-made items seen in the fill

### Notes (samples and tests)

- **UND** undisturbed sample 50mm diameter
- **D** disturbed sample
- **N** standard penetration test
- **愈** SPT + sample
- **Nc** cone penetrometer

### Key

1. **Method**  
   - N: Natural Exposure  
   - E: Existing Excavation  
   - BH: Backhoe bucket  
   - B: Bulldozer Blade  
   - R: Ripper

2. **Support**  
   - T: Timbering

3. **Penetration**  
   - 1: No Resistance  
   - 2: Small resistance  
   - 3: Refusal

4. **Notes (samples and tests)**  
   - U50: undisturbed sample 50mm diameter  
   - D: disturbed sample  
   - N: standard penetration test  
   - 愈: SPT + sample  
   - Nc: cone penetrometer

5. **Classification Symbols**  
   - based on UCS

6. **Moisture**  
   - D: dry  
   - M: moist  
   - W: wet

7. **Consistency/Density Index**  
   - VS: very soft  
   - S: soft  
   - F: firm  
   - St: Stiff  
   - Vst: very stiff  
   - H: hard  
   - Fb: Fribable  
   - Vi: very loose  
   - L: loose  
   - MD: medium  
   - D: dense  
   - VD: very dense
Excavation Log

Project: Redevelopment of Hornsby Quarry
Pit location: Fill in Old Mans Creek, near former quarry workshops

Equipment type and model: Komatsu PC200
Excavation dimensions: 5.3mL x 1.4mW x 3.0mD

Data:
- Datum: 6269752.5N, 322860.0E
- R.L. Surface: 91.0mAHD
- Project: Redevelopment of Hornsby Quarry
- Supervised by: PC
- Checked by: DA
- Pit commenced: 11-Oct-06
- Pit complete: 11-Oct-06

Notes:
- Materials: soil type: plasticity or particle characteristics, colour, secondary and minor components
- Structure and additional observations
- Photo of southern face of pit

<table>
<thead>
<tr>
<th>Method</th>
<th>Notes</th>
<th>Support</th>
<th>Penetration</th>
<th>Depth</th>
<th>Graphic Log</th>
<th>Classification Symbol</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
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<td></td>
<td>1.0</td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2.0</td>
<td></td>
<td></td>
<td>D</td>
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<td>3.0</td>
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<td></td>
<td>4.0</td>
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<td></td>
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</tr>
</tbody>
</table>

Key:
- Method:
  - N: Natural Exposure
  - E: Existing Excavation
  - BH: Backhoe bucket
  - B: Bulldozer Blade
  - R: Ripper
- Support:
  - T: Timbering
- Penetration:
  - 1: No Resistance
  - 2: 3 Refusal
- Notes (samples and tests):
  - U50: undisturbed sample
  - D: disturbed sample
  - N: standard penetration test
  - Nc: cone penetrometer
- Moisture:
  - D: dry
  - M: moist
  - W: wet
- Consistency/density Index:
  - VS: very soft
  - S: soft
  - F: firm
  - St: Stiff
  - Vst: very stiff
  - H: hard
  - Fs: Friable
  - Vl: very loose
  - L: loose
  - MD: medium
  - D: dense
  - VD: very dense

Photo of southern face of pit
TP8: Sidewall – note the concrete diversion drain.

TP8: Spoil
**Excavation Log**

**Project:** Redevelopment of Hornsby Quarry  
**Pit Location:** Eastern Fill area  
**Equipment Type and Model:** Komatsu PC200  
**Excavation Dimensions:** 5.2mL x 1.4mW x 3.5mD  
**Datum:** 6269587.1N, 323393.4E  
**R.L. Surface:** 131.6m AHD

### Notes

<table>
<thead>
<tr>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
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<td>4</td>
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<table>
<thead>
<tr>
<th>Support</th>
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<table>
<thead>
<tr>
<th>Penetration</th>
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<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
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<table>
<thead>
<tr>
<th>Notes (samples and tests)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U50</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>SPT</td>
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<tr>
<td>N’</td>
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<table>
<thead>
<tr>
<th>Classification Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>based on UCS</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Moisture</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>W</td>
</tr>
</tbody>
</table>

### Materials

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Plasticity or Particle Characteristics, Colour, Secondary and Minor Components</th>
</tr>
</thead>
</table>

### Structure and Additional Observations

- Pit walls self-supporting
- End of pit at 3.5m (refusal)

---

**Photo of eastern face of pit**

**Key**

1. Method
   - N: Natural Exposure
   - E: Existing Excavation
   - BH: Backhoe bucket
   - B: Bulldozer blade
   - R: Ripper

2. Support
   - T: Timbering

3. Penetration
   - 1: No Resistance
   - 2: Refusal

4. Notes (samples and tests)
   - U50: Undisturbed sample
   - N: Disturbed sample
   - SPT: Standard penetration test
   - N: Cone penetration test

5. Classification Symbols
   - based on UCS

6. Moisture
   - D: Dry
   - M: Moist
   - W: Wet

7. Consistency/密度 Index
   - VS: Very soft
   - S: Soft
   - F: Firm
   - St: Stiff
   - Vst: Very stiff
   - H: Hard
   - Fb: Friable
   - Vi: Very loose
   - L: Loose
   - MD: Medium
   - D: Dense
   - VD: Very dense
### Excavation Log

**Project:** Redevelopment of Hornsby Quarry  
**Pit No:** TP10  
**Supervised by:** PC  
**Checked by:** DA  
**Datum:** 629604.7N, 323372.3E  
**R.L. Surface:** 131.0mAHD  
**Excavation Dimensions:** 4.8mL x 1.4mW x 2.8mD  
**Pit Commenced:** 12-Oct-06  
**Pit Complete:** 12-Oct-06

#### Materials

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Soil Type</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.</td>
<td>D</td>
</tr>
<tr>
<td>1.0</td>
<td>FILL: Grey-brown clayey sandy GRAVEL with some cobbles and occasional boulders; gravel, cobbles and boulders predominantly subrounded to angular FR dolerite and volcanic breccia; layers of roots every 300-400mm throughout (may represent buried soil horizons as the level of fill has risen over time).</td>
<td>D</td>
</tr>
<tr>
<td>2.0</td>
<td>TOPSOIL: Dark brown to black, sandy silt, (represents a buried soil horizon).</td>
<td>D</td>
</tr>
<tr>
<td>2.2</td>
<td>SM: SANDSTONE: Orange and grey with occasional red-orange streaks, dense, residual silt SAND.</td>
<td>D</td>
</tr>
<tr>
<td>2.6</td>
<td>SM: Change to light orange-grey, very dense, extremely weathered silty SAND.</td>
<td>D</td>
</tr>
<tr>
<td>2.8</td>
<td>SM: Change to light orange-grey, very dense, extremely weathered silty SAND.</td>
<td>D</td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Structure and Additional Observations

- sidewalls collapsing slightly in fill
- PSD, pH = 7.7, sulphate = 410mg/l

### Notes

- **Method:** Natural Exposure, Existing Excavation, Backhoe bucket, Bulldozer Blade, Ripper  
- **Support:** Timbering  
- **Penetration:** No Resistance, Refusal  
- **Notes (samples and tests):** Undisturbed sample, disturbed sample, standard penetration test, figure = result, SPT + sample, cone penetrometer  
- **Classification Symbols:** based on UCS  
- **Moisture:** dry, moist, wet  

---

**Key**

1. **Method**  
   - N: Natural Exposure  
   - E: Existing Excavation  
   - BH: Backhoe bucket  
   - B: Bulldozer Blade  
   - R: Ripper  

2. **Support**  
   - T: Timbering  

3. **Penetration**  
   - 1: No Resistance  
   - 2: Refusal  

4. **Notes (samples and tests)**  
   - U50: undisturbed sample  
   - N: disturbed sample  
   - N*: standard penetration test figure = result  

5. **Classification Symbols**  
   - based on UCS  

6. **Moisture**  
   - D: dry  
   - M: moist  
   - W: wet  

---

**Photo of eastern face of pit**
TP10: Sidewall

TP10: Spoil
Excavation Log

Pells Sullivan Meynink Pty Ltd
Engineering Consultants
Rock-Soil-Water

Sheet: 1 of 1
Job No: PSM1059
Pit No: TP11

Pit commenced: 12-Oct-06
Pit complete: 12-Oct-06
Supervised by: PC
Checked by: DA

Project: Redevelopment of Hornsby Quarry
Pit Location: Eastern Fill area

Equipment type and model: Komatsu PC200
Excavation dimensions: 15.5mL x 1.5mW x 0.9m-1.8mD
R.L. surface: 131.7
Datum: 6269591.8N, 323378.6E

Material:

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>TOPSOIL</td>
</tr>
<tr>
<td>1.8</td>
<td>FILL</td>
</tr>
<tr>
<td>2.0</td>
<td>End of Pit at 0.9m at the eastern end and 1.8m at the western end.</td>
</tr>
<tr>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

- FILL to west, SANDSTONE to east:
  - FILL: Grey-brown clayey sandy gravel with some cobbles and boulders and occasional scrap metal, cables and wood; layers of roots buried every 300-400mm throughout.
  - SANDSTONE: Orange and grey with occasional red-orange streaks, dense, residual silty SAND (sandstone also underlies the fill in the west).

Structure and additional observations:

- Pit dug to find the contact between residual sandstone and fill.

Key:

1. Method
   - N: Natural Exposure
   - E: Existing Excavation
   - BH: Backhoe bucket
   - B: Bulldozer Blade
   - R: Ripper

2. Support
   - T: Timbering

3. Penetration
   - 1: No Resistance
   - 2: Refusal

4. Notes (samples and tests)
   - U50: Undisturbed sample 50mm diameter
   - D: Disturbed sample
   - N: Standard penetration test
     - N* = SPT + sample
     - Nc: Cone penetrometer

5. Classification Symbols
   - Based on UCS

6. Moisture
   - D: Dry
   - M: Moist
   - W: Wet

7. Consistency/ density Index
   - VS: Very Soft
   - S: Soft
   - F: Firm
   - St: Stiff
   - Vst: Very Stiff
   - H: Hard
   - Fs: Friable
   - Vi: Very Loose
   - L: Loose
   - MD: Medium
   - D: Dense
   - VD: Very Dense
TP11: Trench showing sandstone at surface in foreground and fill at surface at opposite end of pit.

TP11: Spoil
**Pells Sullivan Meynink Pty Ltd**

**Excavation Log**

**Sheet:** 1 of 1  
**Job No:** PSM1059  
**Pit No:** TP12  

**Project:** Redevelopment of Hornsby Quarry  
**Pit Location:** Eastern Fill area - into Western Bund  
**Equipment Type and Model:** Komatsu PC200  
**Excavation Dimensions:** 7.2mL x 1.5mW x 5.5mD  
**R.L. Surface:** 132.5mAH  
**Datum:** 6296626.0N, 323345.7E

---

**Notes**

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Soil Type</th>
<th>Materials</th>
<th>Structure and Additional Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>OL</td>
<td>TOPSOIL: Light brown-grey, sandy silt with some gravel, cobbles and boulders.</td>
<td>Pit starts near the top of the bund in the west and finishes in the fill area to the east.</td>
</tr>
<tr>
<td>1.0</td>
<td>GC</td>
<td>FILL: Orange-brown and grey, GRAVEL with some clay, sand, cobbles and occasional boulders; cobbles and boulders are mainly blue-grey, fresh (some HW-MW), subangular to angular volcanic breccia and dolerite up to 0.75m.</td>
<td>At 1.8m, 2 boulders 1m x0.75m x &gt;0.75m in a row; possibly forming the core of the bund. Boulders just seen in the left of the photo. PSD, pH = 7.7, sulphate = &lt;100mg/kg</td>
</tr>
<tr>
<td>2.0</td>
<td></td>
<td>Change in fill to ..... with many boulders</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Key**

1. **Method**  
   - N: Natural Exposure  
   - E: Existing Excavation  
   - BH: Backhoe bucket  
   - B: Bulldozer Blade  
   - R: Ripper

2. **Support**  
   - T: Timbering

3. **Penetration**  
   - 1: No Resistance  
   - 2:  
   - 3: Refusal

4. **Notes (samples and tests)**  
   - U50: undisturbed sample, 50mm diameter  
   - D: disturbed sample  
   - N: standard penetration test, figure = result  
   - N*c: cone penetrometer

5. **Classification Symbols**  
   - based on UCS

6. **Moisture**  
   - D: dry  
   - M: moist  
   - W: wet

7. **Consistency/ density Index**  
   - VS: very soft  
   - S: soft  
   - F: firm  
   - St: stiff  
   - Vst: very stiff  
   - H: hard  
   - Fs: Fissile  
   - Vi: very loose  
   - L: loose  
   - MD: medium  
   - medium  
   - D: dense  
   - VD: very dense

---

**Photo of northern face of pit**

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**PSM Test Pits 11-12-10 06 TP12**
**TP12:** Sidewall

**TP12:** Spoil
## Excavation Log

**Project:** Redevelopment of Hornsby Quarry  
**Pit Location:** Western extent of Eastern Fill area  
**Equipment Type and Model:** Komatsu PC200  
**Excavation Dimensions:** 5.8mL x 1.4mW x 3.7mD  
**R.L. Surface:** 103.3mAHD  
**Datum:** 629766.4N, 323287.4E

### Notes

<table>
<thead>
<tr>
<th>Depth (m)</th>
<th>Method penetration support</th>
<th>Notes samples, tests, etc</th>
<th>Soil type: plasticity or particle characteristics, colour, secondary and minor components</th>
<th>Moisture condition</th>
<th>UCS; hand penetrometer (kPa)</th>
<th>Consistency/density Index</th>
<th>Structure and additional observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3</td>
<td>Natural Exposure (N)</td>
<td></td>
<td>TOPSOIL (FILL): Light brown-grey, sandy silt with some gravel, cobbles and boulders.</td>
<td>D</td>
<td></td>
<td>Vst</td>
<td>Sidewalls self supporting</td>
</tr>
<tr>
<td>1.0</td>
<td>Existing Excavation (E)</td>
<td></td>
<td>FILL: Orange-brown and grey, clayey, sandy GRAVEL with some cobbles and occasional boulders; cobbles and boulders are mainly blue-grey, fresh (some HW-MW), subangular to angular volcanic breccia and dolerite up to 0.5m.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>Backhoe bucket (BH)</td>
<td></td>
<td>RESIDUAL VOLCANIC BRECCIA: Grey with orange streaks, intermediate plasticity sandy silty CLAY; remnant volcanic breccia structure observed.</td>
<td>D</td>
<td></td>
<td>St</td>
<td></td>
</tr>
<tr>
<td>2.0</td>
<td>Bulldozer Blade (B)</td>
<td></td>
<td>at 2.5m (Bulk Sample not tested)</td>
<td></td>
<td></td>
<td>Vst</td>
<td></td>
</tr>
<tr>
<td>3.0</td>
<td>Ripper (R)</td>
<td></td>
<td>VOLCANIC BRECCIA: Grey and orange with black streaks, extremely weathered, extremely low strength rock.</td>
<td>D</td>
<td></td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td></td>
<td></td>
<td>End of pit at 3.7m at refusal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.7</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Key

1. Method  
   - N: Natural Exposure  
   - E: Existing Excavation  
   - BH: Backhoe bucket  
   - B: Bulldozer Blade  
   - R: Ripper  

2. Support  
   - T: Timbering  

3. Penetration  
   - 1: No Resistance  
   - 2: Refusal  

4. Notes (samples and tests)  
   - U50: undisturbed sample  
   - D: disturbed sample  
   - N: standard penetration test  
   - SFT: standard penetration test  

5. Classification Symbols  
   - based on UCS

6. Moisture  
   - D: dry  
   - M: moist  
   - W: wet

7. Consistency/density Index  
   - VS: very soft  
   - S: soft  
   - F: firm  
   - St: stiff  
   - Vst: very stiff  
   - H: hard  
   - Fs: friable  
   - Vi: very loose  
   - L: loose  
   - MD: medium  
   - D: dense  
   - VD: very dense

---

Photo of northern face of pit
### Excavation Log

**Project:** Redevelopment of Hornsby Quarry  
**Location:** Northern zone of eastern fill area  
**Equipment:** Komatsu PC200  
**Excavation Dimensions:** 4.9mL x 1.4mW x 2.2mD  
**Surface:** R.L. 124.5mAHD  
**Datum:** 629826.7N, 323418.4E  

#### Notes

<table>
<thead>
<tr>
<th>Method/penetration</th>
<th>Notes</th>
<th>Depth (m)</th>
<th>Graphic log</th>
<th>Classification</th>
<th>Support</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
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<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8</td>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td></td>
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<td>2.0</td>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.2</td>
<td></td>
<td></td>
<td></td>
<td>D</td>
</tr>
<tr>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**  
- **OL TOPSOIL (FILL):** Light brown-grey, sandy silt with some gravel, cobbles.  
- **SC FILL:** Grey-brown clayey gravelly SAND with occasional to some cobbles and boulders, gravel, cobbles and boulders predominantly surrounded to angular FR dolerite and volcanic breccia; layers of roots every 300-400mm throughout (may represent buried soil horizons as the level of fill has risen over time).  
- **CL RESIDUAL VOLCANIC BRECCIA:** Grey with orange streaks, intermediate plasticity, sandy silt CLAY.  
- **CV VOLCANIC BRECCIA:** Grey and orange with black streaks, extremely weathered, extremely low strength rock.  
- **End of pit at 2.2m.**

#### Materials

- **soil type:** plasticity or particle characteristics, colour, secondary and minor components  
- **moisture condition:** D dry, M moist, W wet  
- **consistency/density index:**  
- **UCS; hand penetrometer (kPa):**  
- **Structure and additional observations:**  

#### Key

1. **Method**  
   - N Natural Exposure  
   - E Existing Excavation  
   - BH Backhoe bucket  
   - B Bulldozer Blade  
   - R Ripper  
2. **Support**  
   - T Timbering  
3. **Penetration**  
   - 1 No Resistance  
   - 2 Refusal  
4. **Notes (samples and tests)**  
   - U50 undisturbed sample  
   - N disturbed sample  
   - N* standard penetration test  
   - figure = result  
   - SFT + sample  
   - Nc cone penetrometer  
5. **Classification Symbols based on UCS**  
6. **Moisture**  
   - D dry  
   - M moist  
   - W wet  
7. **Consistency/ density index**  
   - VS very soft  
   - S soft  
   - F firm  
   - St Stiff  
   - Vst very stiff  
   - H hard  
   - Fs Friable  
   - Vi very loose  
   - L loose  
   - MD medium  
   - D dense  
   - VD very dense  

**Photo of southern face of pit**

---

PSM Test Pits 11-12-10 06 TP14
Excavation Log

Project: Redevelopment of Hornsby Quarry
Pit location: Northern zone of eastern fill area
Equipment type and model: Komatsu PC200
Excavation dimensions: 5.3mL x 1.4mW x 3.5mD

<table>
<thead>
<tr>
<th>Method penetration</th>
<th>Notes</th>
<th>Depth (m)</th>
<th>graphic log</th>
<th>classification symbol</th>
<th>Materials</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>Support</td>
<td></td>
<td>0.7</td>
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<td>soil type: plasticity or particle characteristics, colour, secondary and minor components</td>
<td>D</td>
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<tr>
<td></td>
<td>Notes samples, tests, etc.</td>
<td></td>
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<td></td>
<td></td>
<td>Pit walls self supporting.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>Notes samples, tests, etc.</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>2.0</td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Notes samples, tests, etc.</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>3.0</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Notes samples, tests, etc.</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
<td>End of pit at 3.5m</td>
</tr>
<tr>
<td></td>
<td>Notes samples, tests, etc.</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Notes samples, tests, etc.</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Structure and additional observations

Photo of southern face of pit

Key

1 Method
N Natural Exposure
E Existing Excavation
BH Backhoe bucket
B Bulldozer Blade
R Ripper

2 Support
T Timbering

3 Penetration
1 No Resistance
2 3 Refusal

4 Notes (samples and tests)
U50 undisturbed sample
50mm diameter
D disturbed sample
N standard penetration test
figure = result
N* SPT + sample
Nc cone penetrometer

5 Classification Symbols based on UCS

6 Moisture
D dry
M moist
W wet

7 Consistency/density Index
VS very soft
S soft
F firm
St Stiff
Vst very stiff
H hard
Fs Friable
Vi very loose
L loose
MD medium
D dense
VD very dense
TP15: Sidewall

TP15: Spoil
Excavation Log

<table>
<thead>
<tr>
<th>Method</th>
<th>Support</th>
<th>Penetration</th>
<th>Notes</th>
<th>Depth (m)</th>
<th>Graphic Log</th>
<th>Classification Symbol</th>
<th>Materials</th>
<th>Notes</th>
<th>Structure and Additional Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>U</td>
<td>1</td>
<td>Notes samples, tests, etc.</td>
<td>0.3</td>
<td></td>
<td></td>
<td>soil type: plasticity or particle characteristics, colour, secondary and minor components</td>
<td></td>
<td>Pit sidewalls collapsing slightly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
<td>Natural Exposure</td>
<td>1.0</td>
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<td></td>
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</tr>
<tr>
<td></td>
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<td>3</td>
<td>Existing Excavation</td>
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<td></td>
<td></td>
<td>6</td>
<td>Ripper</td>
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<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Notes:**
- **Topsoil (FILL):** Light brown-grey, sandy silt with some gravel, cobbles.
- **Fill:** Grey-brown clayey sandy gravel with some cobbles and boulders, gravel, cobbles and boulders predominantly subrounded to angular, residual to fresh dolerite and volcanic breccia.

**Structure and Additional Observations:**
- End of pit at 2.5m
- PSM Test Pits 11-12-10 06 TP16

**Key:**
- 1 Method:
  - N Natural Exposure
  - E Existing Excavation
  - BH Backhoe bucket
  - B Bulldozer Blade
  - R Ripper
- 2 Support:
  - T Timbering
- 3 Penetration:
  - 1 No Resistance
  - 2 Refusal
- 4 Notes (samples and tests):
  - U50 undisturbed sample
  - N disturbed sample
  - SPT standard penetration test
  - NC cone penetrometer
- 5 Classification Symbols based on UCS
- 6 Moisture:
  - D dry
  - M moist
  - W wet
- 7 Consistency/density Index:
  - VS very soft
  - S soft
  - F firm
  - St Stiff
  - VsT very stiff
  - H hard
  - Fs Friable
  - Vi very loose
  - L loose
  - MD medium
  - D dense
  - VD very dense
TP16: Sidewall

TP16: Spoil