



**CIVIL GEOTECHNICAL SERVICES**  
**ABN 26 474 013 724**  
**PO Box 678 Croydon Vic 3136**  
**Telephone: 9723 0744 Facsimile: 9723 0799**

21<sup>st</sup> July 2023

Our Reference: 22748:NB1619

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING  
OFFICER CENTRAL – STAGE 5 (OFFICER)**

Please find attached our Report No's 22748/R001 to 22748/R005 which relate to the field density testing that was conducted within the filled allotments at the above subdivision. The level 1 inspections and associated field density testing commenced in November 2022 and was completed in December 2022.

The inspections and testing of the earthworks was undertaken in general accordance with the Level 1 requirements of AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments.

The site inspection and testing was performed by experienced geotechnicians from this office. Any areas that were deemed unsatisfactory were reworked and retested under their supervision. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement. The attached compaction results, which were located randomly throughout the fill profile, are considered to be representative of the bulk fill materials that were placed across the reported allotments by Winslow Constructors during the aforementioned period. The approximate locations of the field density tests can be seen on the attached plan (Figure 1).

We are of the view that the bulk fill materials that have been placed across the reported allotments by Winslow Constructors during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Civil Geotechnical Services

Nick Brock

# FIGURE 1



FILL GREATER THAN 200mm



# Approximate field density test location



**WARNING**  
BEWARE OF UNDERGROUND/OVERHEAD SERVICES  
THE LOCATION OF SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. SPECIAL CONSIDERATION SHOULD BE GIVEN TO CONSTRUCTION PROCEDURES UNDER OVERHEAD ELECTRICITY TRANSMISSION LINES.

File Name: 309133CR201.dwg; User: s.salhan; Date: 07/02/2022 3:48 PM; Sheet: 3 of 7 Sheets; File Location: Y:\spire\boards\309133.dwg; Date: 07/02/2022 3:48 PM; Sheet: 3 of 7 Sheets

| Rev | Amendments        | Approved | Date     |
|-----|-------------------|----------|----------|
| (A) | PRELIMINARY ISSUE | B.W      | 07/02/22 |



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**YourLand**  
Developments

Designed  
S.SALHAN

Checked  
B.IBBS

Authorised  
B.WAREHAM

Date  
07/02/2022

**OFFICER CENTRAL  
STAGE 5  
ROAD AND DRAINAGE  
ROAD LAYOUT PLANS - EARTHWORKS PLAN**  
CARDINIA SHIRE  
YOURLAND

PRELIMINARY 309133CR201 (A)



# COMPACTION ASSESSMENT

Job No 22748  
 Report No 22748/R001  
 Date Issued 12/01/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | SB       |
| Project  | OFFICER CENTRAL - STAGE 5                    | Date tested | 30/11/22 |
| Location | OFFICER                                      | Checked by  | JHF      |

|         |            |                 |        |       |       |
|---------|------------|-----------------|--------|-------|-------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: | 09:30 |
|---------|------------|-----------------|--------|-------|-------|

Test procedure AS 1289.2.1.1 & 5.8.1

| Test No                     | 1                 | 2                 | 3                 | 4                 | 5                 | 6                 |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Location                    | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 |
| Approximate depth below FSL |                   |                   |                   |                   |                   |                   |
| Measurement depth           | mm                | 175               | 175               | 175               | 175               | 175               |
| Field wet density           | t/m <sup>3</sup>  | 2.09              | 2.08              | 2.07              | 2.18              | 2.16              |
| Field moisture content      | %                 | 20.4              | 22.5              | 15.7              | 13.3              | 13.1              |

Test procedure AS 1289.5.7.1

| Test No                             | 1                | 2    | 3    | 4    | 5    | 6    |
|-------------------------------------|------------------|------|------|------|------|------|
| Compactive effort                   | Standard         |      |      |      |      |      |
| Oversize rock retained on sieve     | mm               | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| Percent of oversize material        | wet              | 0    | 0    | 0    | 0    | 0    |
| Peak Converted Wet Density          | t/m <sup>3</sup> | 2.11 | 2.09 | 2.09 | 2.18 | 2.19 |
| Adjusted Peak Converted Wet Density | t/m <sup>3</sup> | -    | -    | -    | -    | -    |
| Optimum Moisture Content            | %                | 21.0 | 24.5 | 17.5 | 12.5 | 15.5 |

|  |          |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|
| Moisture Variation From Optimum Moisture Content | 1.0% dry | 2.0% dry | 2.0% dry | 0.5% wet | 2.0% dry | 0.5% dry |
|--|----------|----------|----------|----------|----------|----------|

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

|                                   |   |      |      |      |      |      |      |
|-----------------------------------|---|------|------|------|------|------|------|
| Density Ratio ( R <sub>HD</sub> ) | % | 99.5 | 99.0 | 99.0 | 99.5 | 99.0 | 99.5 |
|-----------------------------------|---|------|------|------|------|------|------|

Material description

|                    |
|--------------------|
| No 1 - 6 Clay Fill |
|--------------------|

AVRLOT HILF V1.10 MAR 13



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 Accredited for compliance with  
 ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 22748  
 Report No 22748/R002  
 Date Issued 12/01/23

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | SB       |
| Project  | OFFICER CENTRAL - STAGE 5                    | Date tested | 01/12/22 |
| Location | OFFICER                                      | Checked by  | JHF      |

|         |            |                 |        |             |
|---------|------------|-----------------|--------|-------------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: 13:00 |
|---------|------------|-----------------|--------|-------------|

Test procedure AS 1289.2.1.1 & 5.8.1

| Test No                     |                  | 7                 | 8                 | 9                 | 10                | 11                | 12                |
|-----------------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Location                    |                  | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 |
| Approximate depth below FSL |                  |                   |                   |                   |                   |                   |                   |
| Measurement depth           | mm               | 175               | 175               | 175               | 175               | 175               | 175               |
| Field wet density           | t/m <sup>3</sup> | 2.15              | 2.15              | 2.14              | 2.14              | 2.15              | 2.13              |
| Field moisture content      | %                | 10.4              | 12.8              | 15.8              | 11.5              | 10.5              | 10.7              |

Test procedure AS 1289.5.7.1

| Test No                             |                  | 7        | 8    | 9    | 10   | 11   | 12   |
|-------------------------------------|------------------|----------|------|------|------|------|------|
| Compactive effort                   |                  | Standard |      |      |      |      |      |
| Oversize rock retained on sieve     | mm               | 19.0     | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| Percent of oversize material        | wet              | 0        | 0    | 0    | 0    | 0    | 0    |
| Peak Converted Wet Density          | t/m <sup>3</sup> | 2.18     | 2.19 | 2.16 | 2.18 | 2.18 | 2.18 |
| Adjusted Peak Converted Wet Density | t/m <sup>3</sup> | -        | -    | -    | -    | -    | -    |
| Optimum Moisture Content            | %                | 10.5     | 14.5 | 17.5 | 12.5 | 10.5 | 11.5 |

|  |          |          |          |          |      |          |
|--|----------|----------|----------|----------|------|----------|
| Moisture Variation From Optimum Moisture Content | 0.5% dry | 1.5% dry | 2.0% dry | 1.0% dry | 0.0% | 1.0% dry |
|--|----------|----------|----------|----------|------|----------|

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

|                                   |   |      |      |      |      |      |      |
|-----------------------------------|---|------|------|------|------|------|------|
| Density Ratio ( R <sub>HD</sub> ) | % | 98.5 | 98.0 | 99.5 | 98.5 | 98.5 | 97.5 |
|-----------------------------------|---|------|------|------|------|------|------|

Material description

|                     |
|---------------------|
| No 7 - 12 Clay Fill |
|---------------------|

AVRLOT HILF V1.10 MAR 13



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# COMPACTION ASSESSMENT

Job No 22748  
 Report No 22748/R003  
 Date Issued 19/12/22

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | SB       |
| Project  | OFFICER CENTRAL - STAGE 5                    | Date tested | 02/12/22 |
| Location | OFFICER                                      | Checked by  | JHF      |

|         |            |                 |        |             |
|---------|------------|-----------------|--------|-------------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: 12:00 |
|---------|------------|-----------------|--------|-------------|

### Test procedure AS 1289.2.1.1 & 5.8.1

| Test No                     | 13                | 14                | 15                | 16                | 17                | 18                |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Location                    | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 |
| Approximate depth below FSL |                   |                   |                   |                   |                   |                   |
| Measurement depth           | mm                | 175               | 175               | 175               | 175               | 175               |
| Field wet density           | t/m <sup>3</sup>  | 2.12              | 2.15              | 2.14              | 2.14              | 2.13              |
| Field moisture content      | %                 | 10.7              | 16.0              | 13.9              | 13.9              | 12.3              |

### Test procedure AS 1289.5.7.1

| Test No                             | 13               | 14   | 15   | 16   | 17   | 18   |
|-------------------------------------|------------------|------|------|------|------|------|
| Compactive effort                   | Standard         |      |      |      |      |      |
| Oversize rock retained on sieve     | mm               | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| Percent of oversize material        | wet              | 0    | 0    | 0    | 0    | 0    |
| Peak Converted Wet Density          | t/m <sup>3</sup> | 2.15 | 2.15 | 2.20 | 2.17 | 2.18 |
| Adjusted Peak Converted Wet Density | t/m <sup>3</sup> | -    | -    | -    | -    | -    |
| Optimum Moisture Content            | %                | 12.0 | 18.0 | 16.0 | 15.5 | 12.5 |

|  |          |          |          |          |          |      |
|--|----------|----------|----------|----------|----------|------|
| Moisture Variation From Optimum Moisture Content | 1.5% dry | 2.0% dry | 2.0% dry | 1.5% dry | 1.0% dry | 0.0% |
|--|----------|----------|----------|----------|----------|------|

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

|                                   |   |      |      |      |      |      |      |
|-----------------------------------|---|------|------|------|------|------|------|
| Density Ratio ( R <sub>HD</sub> ) | % | 99.0 | 99.5 | 97.5 | 99.0 | 98.5 | 98.0 |
|-----------------------------------|---|------|------|------|------|------|------|

### Material description

|                      |
|----------------------|
| No 13 - 18 Clay Fill |
|----------------------|

AVRLOT HILF V1.10 MAR 13



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# COMPACTION ASSESSMENT

Job No 22748  
 Report No 22748/R004  
 Date Issued 19/12/22

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | SB       |
| Project  | OFFICER CENTRAL - STAGE 5                    | Date tested | 03/12/22 |
| Location | OFFICER                                      | Checked by  | JHF      |

|                |                   |                        |        |                    |
|----------------|-------------------|------------------------|--------|--------------------|
| <b>Feature</b> | <b>EARTHWORKS</b> | <b>Layer thickness</b> | 200 mm | <b>Time:</b> 09:00 |
|----------------|-------------------|------------------------|--------|--------------------|

### Test procedure AS 1289.2.1.1 & 5.8.1

| Test No                     | 19                | 20                | 21                | 22                | 23                | 24                |
|-----------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Location                    | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 |
| Approximate depth below FSL |                   |                   |                   |                   |                   |                   |
| Measurement depth           | mm                | 175               | 175               | 175               | 175               | 175               |
| Field wet density           | t/m <sup>3</sup>  | 2.16              | 2.15              | 2.16              | 2.14              | 2.15              |
| Field moisture content      | %                 | 15.9              | 14.6              | 15.8              | 15.7              | 14.5              |

### Test procedure AS 1289.5.7.1

| Test No                             | 19               | 20   | 21   | 22   | 23   | 24   |
|-------------------------------------|------------------|------|------|------|------|------|
| Compactive effort                   | Standard         |      |      |      |      |      |
| Oversize rock retained on sieve     | mm               | 19.0 | 19.0 | 19.0 | 19.0 | 19.0 |
| Percent of oversize material        | wet              | 0    | 0    | 0    | 0    | 0    |
| Peak Converted Wet Density          | t/m <sup>3</sup> | 2.17 | 2.15 | 2.18 | 2.18 | 2.18 |
| Adjusted Peak Converted Wet Density | t/m <sup>3</sup> | -    | -    | -    | -    | -    |
| Optimum Moisture Content            | %                | 16.0 | 16.0 | 18.5 | 15.5 | 14.5 |

|  |      |          |          |      |      |      |
|--|------|----------|----------|------|------|------|
| Moisture Variation From Optimum Moisture Content | 0.0% | 1.5% dry | 2.5% dry | 0.0% | 0.0% | 0.0% |
|--|------|----------|----------|------|------|------|

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

|                                   |   |      |       |      |      |      |      |
|-----------------------------------|---|------|-------|------|------|------|------|
| Density Ratio ( R <sub>HD</sub> ) | % | 99.5 | 100.0 | 99.0 | 98.5 | 99.0 | 99.0 |
|-----------------------------------|---|------|-------|------|------|------|------|

### Material description

|                      |
|----------------------|
| No 19 - 24 Clay Fill |
|----------------------|

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

Job No 22748  
 Report No 22748/R005  
 Date Issued 20/12/2022

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | SB       |
| Project  | OFFICER CENTRAL - STAGE 5                    | Date tested | 05/12/22 |
| Location | OFFICER                                      | Checked by  | JHF      |

|         |            |                 |        |             |
|---------|------------|-----------------|--------|-------------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: 10:00 |
|---------|------------|-----------------|--------|-------------|

Test procedure AS 1289.2.1.1 & 5.8.1

| Test No                     | 25                | 26                | 27                | -    | - | - |
|-----------------------------|-------------------|-------------------|-------------------|------|---|---|
| Location                    | REFER TO FIGURE 1 | REFER TO FIGURE 1 | REFER TO FIGURE 1 |      |   |   |
| Approximate depth below FSL |                   |                   |                   |      |   |   |
| Measurement depth           | mm                | 175               | 175               | 175  | - | - |
| Field wet density           | t/m <sup>3</sup>  | 2.16              | 2.14              | 2.16 | - | - |
| Field moisture content      | %                 | 13.5              | 13.3              | 11.8 | - | - |

Test procedure AS 1289.5.7.1

| Test No                             | 25               | 26   | 27   | -    | - | - |
|-------------------------------------|------------------|------|------|------|---|---|
| Compactive effort                   | Standard         |      |      |      |   |   |
| Oversize rock retained on sieve     | mm               | 19.0 | 19.0 | 19.0 | - | - |
| Percent of oversize material        | wet              | 0    | 0    | 0    | - | - |
| Peak Converted Wet Density          | t/m <sup>3</sup> | 2.18 | 2.19 | 2.21 | - | - |
| Adjusted Peak Converted Wet Density | t/m <sup>3</sup> | -    | -    | -    | - | - |
| Optimum Moisture Content            | %                | 14.0 | 14.0 | 13.0 | - | - |

|  |          |          |          |   |   |   |
|--|----------|----------|----------|---|---|---|
| Moisture Variation From Optimum Moisture Content | 0.5% dry | 1.0% dry | 1.0% dry | - | - | - |
|--|----------|----------|----------|---|---|---|

density and moisture ratio results relate only to the soil to the depth of test and not to the full depth of the layer

|                                   |   |      |      |      |   |   |
|-----------------------------------|---|------|------|------|---|---|
| Density Ratio ( R <sub>HD</sub> ) | % | 99.0 | 98.0 | 98.0 | - | - |
|-----------------------------------|---|------|------|------|---|---|

Material description

|                      |
|----------------------|
| No 25 - 27 Clay Fill |
|----------------------|

AVRLOT HILF V1.10 MAR 13



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