



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

27<sup>th</sup> August 2024

Our Reference: 24233:NB1953

Winslow Constructors Pty Ltd  
50 Barry Road  
CAMPBELLFIELD VIC 3061

Dear Sirs/Madams,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING**  
**CREEKSTONE – STAGE N4 (TARNEIT)**

Please find attached our Report No's 24233/R001 to 24233/R004 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 was performed in April 2024.

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





## COMPACTION ASSESSMENT

### CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24233  
Report No 24233/R001  
Date Issued 02/05/24

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | JB       |
| Project  | CREEKSTONE - STAGE N4                        | Date tested | 16/04/24 |
| Location | TARNEIT                                      | Checked by  | JHF      |

|         |            |                 |        |             |
|---------|------------|-----------------|--------|-------------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: 11:00 |
|---------|------------|-----------------|--------|-------------|

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               | 175               |
| Field wet density t/m <sup>3</sup> | 1.89              | 1.84              | 1.93              | 1.93              | 1.89              | 1.91              |
| Field moisture content %           | 19.5              | 19.6              | 19.7              | 24.4              | 24.3              | 22.1              |

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 | 19.0 |
| Percent of oversize material wet                     | 0        | 0    | 0    | 0    | 0    | 0    |
| Peak Converted Wet Density t/m <sup>3</sup>          | 1.91     | 1.88 | 1.94 | 1.96 | 1.92 | 1.91 |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | -        | -    | -    | -    | -    | -    |
| Optimum Moisture Content %                           | 21.5     | 22.0 | 22.5 | 26.5 | 27.0 | 24.5 |

|  |          |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|
| Moisture Variation From Optimum Moisture Content | 2.0% dry | 2.5% dry | 2.5% dry | 2.0% dry | 2.5% dry | 2.0% 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 ( $R_{HD}$ ) | % | 99.0 | 97.5 | 99.5 | 98.5 | 98.5 | 100.0 |
|----------------------------|---|------|------|------|------|------|-------|

Material description

No 1 - 6 Clay Fill

AVRLOT HILF V1.10 MAR 13



NATA Accredited Laboratory No 9909  
Accredited for compliance with  
ISO/IEC 17025 - Testing

Approved Signatory : Justin Fry



# COMPACTION ASSESSMENT

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24233  
Report No 24233/R002  
Date Issued 02/05/24

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | JB       |
| Project  | CREEKSTONE - STAGE N4                        | Date tested | 17/04/24 |
| Location | TARNEIT                                      | Checked by  | JHF      |

|         |            |                 |        |             |
|---------|------------|-----------------|--------|-------------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: 08:00 |
|---------|------------|-----------------|--------|-------------|

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> | 1.80              | 1.88              | 1.85              | 1.83              | 1.85              | 1.85              |
| Field moisture content %           | 29.3              | 27.9              | 31.5              | 25.6              | 26.7              | 25.2              |

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>          | 1.83     | 1.88 | 1.91 | 1.87 | 1.87 | 1.89 |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | -        | -    | -    | -    | -    | -    |
| Optimum Moisture Content %                           | 31.5     | 30.5 | 33.5 | 26.0 | 27.0 | 27.0 |

|  |          |          |          |      |      |          |
|--|----------|----------|----------|------|------|----------|
| Moisture Variation From Optimum Moisture Content | 2.0% dry | 2.5% dry | 2.0% dry | 0.0% | 0.0% | 2.0% 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 ( $R_{HD}$ ) | % | 98.5 | 100.0 | 97.0 | 97.5 | 98.5 | 98.0 |
|----------------------------|---|------|-------|------|------|------|------|

Material description

No 7 - 12 Clay Fill

AVRLOT HILF V1.10 MAR 13



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*Justin Fry*

Approved Signatory : Justin Fry



## COMPACTION ASSESSMENT

### CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24233  
Report No 24233/R003  
Date Issued 23/04/24

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | JB       |
| Project  | CREEKSTONE - STAGE N4                        | Date tested | 18/04/24 |
| Location | TARNEIT                                      | Checked by  | JHF      |

|         |            |                 |        |             |
|---------|------------|-----------------|--------|-------------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: 12:30 |
|---------|------------|-----------------|--------|-------------|

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               | 175               |
| Field wet density t/m <sup>3</sup> | 1.86              | 1.84              | 1.84              | 1.86              | 1.84              | 1.89              |
| Field moisture content %           | 32.2              | 30.8              | 31.2              | 30.6              | 32.1              | 32.9              |

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 | 19.0 |
| Percent of oversize material wet                     | 0        | 0    | 0    | 0    | 0    | 0    |
| Peak Converted Wet Density t/m <sup>3</sup>          | 1.88     | 1.89 | 1.88 | 1.91 | 1.92 | 1.94 |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | -        | -    | -    | -    | -    | -    |
| Optimum Moisture Content %                           | 34.5     | 33.0 | 33.5 | 33.0 | 34.5 | 35.0 |

|  |          |          |          |          |          |          |
|--|----------|----------|----------|----------|----------|----------|
| Moisture Variation From Optimum Moisture Content | 2.0% dry | 2.0% dry | 2.5% dry | 2.0% dry | 2.0% dry | 1.5% 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 ( $R_{HD}$ ) | % | 98.5 | 97.0 | 98.0 | 97.5 | 96.0 | 97.5 |
|----------------------------|---|------|------|------|------|------|------|

Material description

No 13 - 18 Clay Fill

AVRLOT HILF V1.10 MAR 13



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Approved Signatory : Justin Fry





## COMPACTION ASSESSMENT

### CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Job No 24233  
Report No 24233/R004  
Date Issued 23/04/24

|          |  |             |          |
|----------|--|-------------|----------|
| Client   | WINSLOW CONSTRUCTORS PTY LTD (CAMPBELLFIELD) | Tested by   | JB       |
| Project  | CREEKSTONE - STAGE N4                        | Date tested | 19/04/24 |
| Location | TARNEIT                                      | Checked by  | JHF      |

|         |            |                 |        |             |
|---------|------------|-----------------|--------|-------------|
| Feature | EARTHWORKS | Layer thickness | 200 mm | Time: 10:30 |
|---------|------------|-----------------|--------|-------------|

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               | 175               |
| Field wet density t/m <sup>3</sup> | 1.92              | 1.90              | 1.91              | 1.89              | 1.85              | 1.86              |
| Field moisture content %           | 30.2              | 31.3              | 28.4              | 30.4              | 31.2              | 27.1              |

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 | 19.0 |
| Percent of oversize material wet                     | 0        | 0    | 0    | 0    | 0    | 0    |
| Peak Converted Wet Density t/m <sup>3</sup>          | 1.97     | 1.94 | 1.96 | 1.96 | 1.89 | 1.92 |
| Adjusted Peak Converted Wet Density t/m <sup>3</sup> | -        | -    | -    | -    | -    | -    |
| Optimum Moisture Content %                           | 30.0     | 33.5 | 30.5 | 30.0 | 32.5 | 29.5 |

|  |      |          |          |          |          |          |
|--|------|----------|----------|----------|----------|----------|
| Moisture Variation From Optimum Moisture Content | 0.0% | 2.0% dry | 2.0% dry | 0.5% wet | 1.0% dry | 2.5% 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 ( $R_{HD}$ ) | % | 97.0 | 98.0 | 97.5 | 96.5 | 97.5 | 97.0 |
|----------------------------|---|------|------|------|------|------|------|

Material description

No 19 - 24 Clay Fill

AVRLOT HILF V1.10 MAR 13



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