

Ascot Demolitions Pty Ltd
PO Box 655
Ormeau QLD 4208

676181.00
6 November 2019
R.001. Rev0
NB:CRB

Attention: Tom Kettenun

Email: tom.ascot@outlook.com

Dear Sir

Report on Level 1 Bulk Earthworks Inspection and Testing
Proposed Residential Development
72-74 Harlen Road, Salisbury

1. Introduction

This report presents a summary of geotechnical inspections and bulk earthworks testing undertaken by Douglas Partners Pty Ltd (DP) on 10 and 12 September 2019 for a proposed residential development at 72 - 74 Harlen Road, Salisbury.

The scope of inspection and testing provided by DP comprised full-time supervision of earthworks operations ('Level 1' inspection and testing) as defined in AS 3798:2007 "Guidelines on Earthworks for Commercial and Residential Developments".

2. Earthworks Activities

2.1 Extent of Works

The extent of cut/fill was 119 m³ and 731 m³ placed for this project is indicated on Drawing 1 attached. Broadly, the earthworks comprise up to 0.5 m depth of fill on site.

2.2 Subgrade Preparation

The vegetation including small shrubs and trees were removed, and the site was stripped of topsoil to expose the natural subgrade which comprised silty sandy clay. The subgrade was test rolled with a 22-tonne body truck, and no visible signs of movement were observed.

2.3 Fill material

The material used for filling comprised silty sandy clay won from areas of onsite cut and imported sandy gravel to gravelly sandy clay from a site at Upper Mount Gravatt. Material quality tests of the imported fill material had not been provided.

2.4 Specification

The specification for bulk fill beneath building pads and roads was adopted from AS 3798 Guidelines on earthworks for commercial and residential developments and comprised compaction to 98% standard maximum dry density ratio, with moisture content variation maintained within 2% of optimum moisture content (OMC).

2.5 Placement and Testing of General Fill

The fill area was moisture conditioned prior to placement of fill. Imported and site won materials were spread by a grader in 150 mm to 200 mm loose thickness layers and compacted by a 14-tonne pad foot roller.

Observations were made by a geotechnician who was present on-site full-time during the works. At completion of compaction, the compacted fill was presented for testing.

Density testing was conducted using the nuclear gauge method (AS 1289.5.8.1) and relative compaction was determined using the standard compaction method (AS 1289.5.1.1). At each location, levels were measured from on-site survey marks and UTM coordinates were recorded with a handheld GPS accurate to approximately 5 m in position. The results of the density tests, which were forwarded to Ascot Demolitions Pty Ltd during the works, are summarised in Table 1.

Table 1: Summary of Density Testing

Item	Compaction	Moisture Variation
Specification	Minimum 98% standard	Within 2.0% of OMC*
No. of Tests	4	4
Range of Results	98.0% to 104.5% standard	2.0 % dry of OMC to 2.0% wet of OMC
No. of Tests Outside the Specification	0	0
Mean (all tests)	101.9% standard	2.0% dry of OMC

* OMC – optimum moisture content for standard compaction

3. Comments

DP undertook 'Level 1' inspection and testing of bulk earthworks being placed by Ascot Demolitions Pty Ltd at 72-74 Harlen Road, Salisbury on 10 and 12 September 2019. Based on the inspections and test results, the bulk earthworks were carried out in accordance with the specification requirements.

DP does not undertake to guarantee the work of the contractors nor relieve their responsibility to produce a completed product conforming to the requirements of the specification.

For building on controlled fill at the site, consideration should be given by the user to the following:

- the possibility that additional fill has been placed after the date of the last field density test or at times when DP has not been notified that filling operations were in progress;

- possible disruption of the compacted fill by services installation;
- adequate confinement of the filled areas; and
- the suitability of the filled land to support structures of various types without excessive deflection.

We trust that the above information is suitable for your present requirements. Should you have any queries, please do not hesitate to contact the undersigned.

Yours faithfully

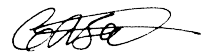
Douglas Partners Pty Ltd



Noel Bradley

Assistant Laboratory Manager

Reviewed by



Chris Bell

Principal

Attachments: Drawing 1 – Site and Test Location Plan;
 Notes about this report;
 Field Density Report

Material Test Report



Report Number: 676181.00-1
Issue Number: 1
Date Issued: 04/11/2019
Client: Ascot Demolitions Pty Ltd
 PO Box 655, Ormeau QLD 4208
Contact: Tom Kettenun
Project Number: 676181.00
Project Name: 72-74 Harlen Road
Project Location: 72-74 Harlen Road, Salisbury
Work Request: 7404
Dates Tested: 25/10/2019 - 28/10/2019
Sampling Method: AS1289 1.2.1 6.4 (b) - Sampling from layers in earthworks or pavement - compacted
Specification: Minimum 98% Standard
Lot Number: Building Pad

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Accredited for compliance with ISO/IEC 17025 - Testing

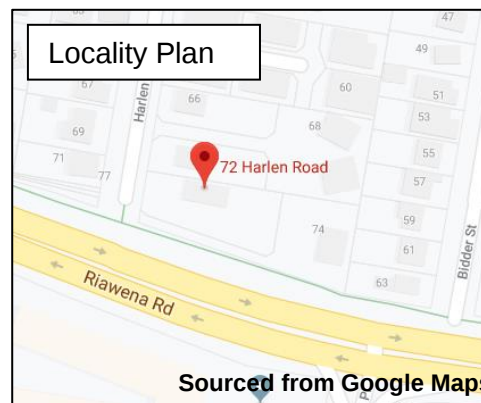
Approved Signatory: Noel Bradley
 Assistant Laboratory Manager
 NATA Accredited Laboratory Number: 828

Compaction Control AS 1289 5.1.1 & 5.4.1 & 5.8.1 & 2.1.1

Sample Number	BN-7404A	BN-7404B	BN-7404C	BN-7404D
Date Tested	25/10/2019	25/10/2019	25/10/2019	25/10/2019
Time Tested	13:33	13:39	13:50	14:00
Test Request #/Location	Building Pad	Building Pad	Building Pad	Building Pad
Easting	502928	502973	502990	502960
Northing	6951792	6951781	6951763	6951769
Layer / Reduced Level	Finished Layer	Finished Layer	Finished Layer	Finished Layer
Thickness of Layer (mm)	300	300	300	300
Soil Description	Silty Sandy Gravel	Silty Sandy Gravel	Silty Sandy Gravel	Silty Sandy Gravel
Test Depth (mm)	150	150	150	150
Fraction Tested (mm)	19.0	19.0	19.0	19.0
Oversize (wet basis) %	0	0	0	0
Oversize (dry basis) %	0	0	0	0
Field Wet Density t/m ³	2.26	2.26	2.22	2.25
Field Moisture Content %	8.0	8.8	9.3	8.2
Field Dry Density t/m ³	2.09	2.07	2.04	2.08
Maximum Dry Density t/m ³	2.00	1.99	2.03	2.11
Adjusted Maximum Dry Density t/m ³	**	**	**	**
Optimum Moisture Content (OMC) %	10.0	11.0	11.0	10.0
Adjusted Optimum Moisture Content (OMC) %	**	**	**	**
Moisture Variation %	2.0	2.0	2.0	2.0
Moisture Ratio %	78.5	80.5	84.0	81.0
Density Ratio %	104.5	104.5	100.5	98.0
Compaction Method	Standard	Standard	Standard	Standard

Moisture Variation Note:

Positive values = test is dry of OMC
 Negative values = test is wet of OMC



Notes:

1. Test locations are approximate only and are shown with reference to existing and proposed site features.
2. Drawing adapted from plan Earthwks.dwg project B17/198E Rev 0 Provided by client.

About this Report

Douglas Partners



Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

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This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

- In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;

- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.