

AW1996/1 AE
August 31, 2006

Doug Gow & Associates
609 Olive Street
ALBURY NSW 2640

Attention: Mr Ben Fry

Dear Sir,

**RE: CLASSIFICATION OF FOUNDATION SOIL CONDITIONS,
LOT 12, HUME COUNTRY ESTATE, ALBURY, NSW.**

In accordance with your request, geotechnical testing was carried out on the 7.08.2006 in order to classify the above site. One borehole was drilled to a depth of up to 3.0m below the existing ground level. A senior geotechnician logged the encountered subsurface soils and conditions within the boreholes. Disturbed and undisturbed soil samples were obtained for testing in the laboratory, which comprised visual classifications and Atterberg limits tests. The summary borehole log, which also includes the laboratory test results, is attached to this report.

Based upon the results of the field and laboratory testing, the subsurface conditions encountered in the borehole comprise:

- Sandy Clay Topsoil of low plasticity to 0.2m overlying
- slopewash Clayey Sand and Clay of low and medium plasticity to at least 3.0m.

Standing groundwater or groundwater seepages were not encountered within the boreholes at the time of the fieldwork. It should be acknowledged that the occurrence and level of groundwater could fluctuate with variations in rainfall, temperature and other factors.

Based on the results of the field and laboratory testings, the foundation soils encountered at the site has been classified as being "Class M", with an estimated characteristic surface movement (y_s) of up to 40mm. The footing system for the proposed residential building should be designed for a "Class M" site classification. The site classification has been undertaken in accordance with Section 2, Site Classification, AS2870-1996 "Residential Slabs and Footings".

Footings can be found within the undisturbed natural slopewash Clays below the Topsoil and underlying Clayey Sand of low plasticity and may be designed for allowable bearing pressures of up to 50kPa and 100kPa for raft slab beams and strip footings respectively.

The effect of past and future vegetation and additional cutting and filling should be considered in the selection of a design value for differential movement. Footings for the proposed development should be designed and constructed in accordance with AS2870-1996.

If more than 800mm of 'sand' fill or 400mm of 'other' fill is used within the building area after the field testing the above site classification must be reassessed.



Service trenches backfilled with uncontrolled fill should not extend below a line extending out and down at 45° from the outer bottom corner of footing beams or strip and pad footings.

APPLICABILITY

This report has been prepared for the particular brief given to us and the data and opinions included in this report should not be used in other contexts or for any other purpose without our prior review and agreement.

The site classification is based upon the field tests at specific point locations and subsequent laboratory testing. The nature and continuity of the subsoils away from the field test locations are inferred and it must be appreciated that actual conditions could vary from the assumed subsurface conditions. Occasionally it is not possible to distinguish fill from natural soils during the field testing. Footing excavations must be examined carefully and if soil conditions encountered in footing excavations differ from those described in this report, further geotechnical advice must be sought.

The site classification is based upon a limited field testing of the near surface soils at the property. No other type of geotechnical assessment, such as slope stability was undertaken as part of the site classification. Specialist equipment, techniques and personnel are used to perform a detailed geotechnical investigation. Please contact Coffey for information relating to other geotechnical issues for the proposed development.

The classification presented above is provided on the basis that the performance expectations set out in Appendix B of AS2870-1996 are acceptable and that site maintenance complies with the provisions of CSIRO Sheet No. 10-91, A Guide to Home Owners on Foundations Maintenance and Footing Performance, a copy of which is attached. It is important that the CSIRO document is passed on to the building owners so that they are aware of its guidelines.

An invoice is also enclosed.

For and on behalf of

COFFEY GEOSCIENCES PTY LTD



A P EDWARDS

Encl. Borehole log

A Guide To Home Owners On Foundations Maintenance And Footing Performance, CSIRO



Engineering Log - Borehole

Client: **Doug Gow & Associates**

Date started: **7.8.2006**

Principal:

Date completed: **7.8.2006**

Project: **Hume Country Estate, Albury, NSW**

Logged by: **RB**

Borehole Location: **Centre of Block**

Checked by: *N*



drill model and mounting:	Gemco HS7	Easting:	slope:	-90°	R.L. Surface:	ESL
hole diameter:	100 mm	Northing	bearing:		datum:	

drilling information				material substance			
method	penetration	support	notes samples, tests, etc	depth metres	classification symbol	material	structure and additional observations
1 2 3				RL		soil type: plasticity or particle characteristics, colour, secondary and minor components.	
ADV		N			CL	TOPSOIL: Sandy clay, low plasticity, brown, fine to coarse grained sand.	ROOT ZONE - TOPSOIL
					SC	CLAYEY SAND: Fine to coarse grained sand, low plasticity, grey.	SLOPEWASH
				0.5	CL	CLAY: Medium plasticity, yellow, grey, orange, traces of fine to coarse grained sand.	Swell = 3.6%
			U ₅₀	1.0			
					CL	CLAY: Medium plasticity, yellow, grey, traces of fine to coarse grained sand.	Liquid Limit = 46% Linear Shrinkage = 14.0%
			D	1.5			
				2.0			
				2.5			
				3.0			
						Borehole BH1 Lot 12 terminated at 3m	
				3.5			
				4.0			

BOREHOLE_A1996.GPJ_COFFEY.GDT_06.09.06

method AS auger screwing* AD auger drilling* RR roller/tricone W washbore CT cable tool HA hand auger DT diatube B blank bit V V bit T TC bit *bit shown by suffix e.g. ADT	support M mud N nil C casing penetration 1 2 3 4 no resistance ranging to refusal water 10/1/98 water level on date shown water inflow water outflow	notes, samples, tests U ₅₀ undisturbed sample 50mm diameter U ₆₃ undisturbed sample 63mm diameter D disturbed sample N standard penetration test (SPT) N* SPT - sample recovered Nc SPT with solid cone V vane shear (kPa) P pressuremeter Bs bulk sample E environmental sample R refusal	classification symbols and soil description based on unified classification system moisture D dry M moist W wet W _p plastic limit W _L liquid limit	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 dense D dense VD very dense
--	---	--	---	---

Form GEO 5.3 Issue 3 Rev.2