

IGS Technical Note

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Geotechnical Services

CPT & Piezocone

Dilatometer

Seismic Dilatometer

Vane Shear

Tee-Bar

Push-Sampling

Piezometer Installation

In Situ Permeability

Field Fleet ("the girls")

Esme – 10-20t all-terrain



Beryl – 15t 4 wheel drive



Eunice – 20t 6x4 bogey

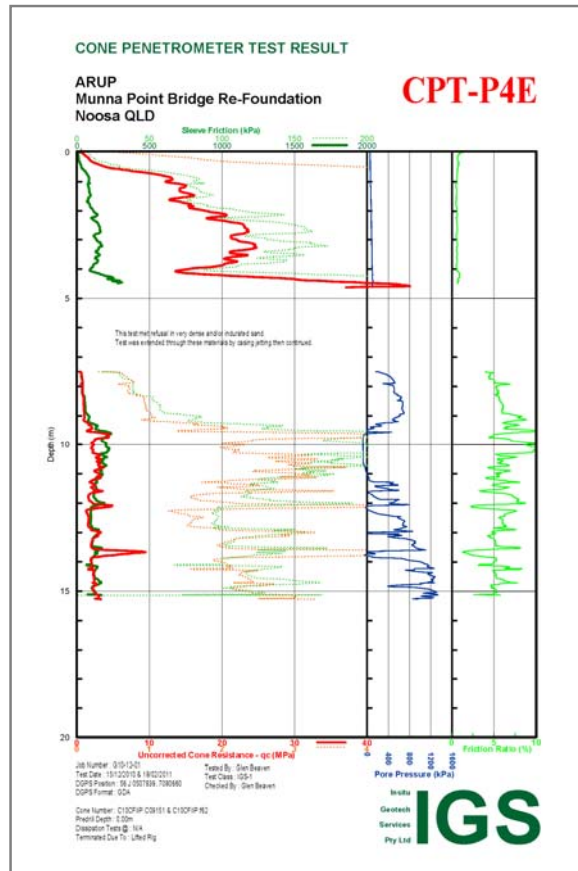


Baby Jayne – 15t portable



Penetrating CPTs Thru "Coffee Rock"

IGS has recently undertaken a project in which almost half the CPTs met refusal well above target depth, tightly embedded in a layer of strongly cemented indurated sand – known colloquially as "coffee rock". These conditions are normally deemed un-testable. We developed a method and new equipment to penetrate the coffee rock and provide satisfactory CPT data to our client



The challenge to testing was exacerbated by the fact that the testing was being done over-water.

We were testing from our mini-jack-up-rig "Minnie". See the photo below.

We solved the predicament by developing a CPT-casing-jetting-chopping system that permitted us to chop, wash and push our very strong 55mm OD steel CPT casing right through the coffee rock, permitting us to then test conventionally by CPT and CPTu, penetrating well below the coffee rock layer.

One of the test plots is shown adjacent.

Cone resistance of well over 50MPa and limiting sleeve-friction of 1500kPa+ was met at refusal in the coffee rock.

Note that coffee rock provides a challenge to CPT testing on some sites.

The technique we developed here will be usable on land sites or over-water sites in the future.



Project : Munna Point Bridge – Noosa Heads
Owner : Sunshine Coast Regional Council
Client : Arup

We thank Arup and Sunshine Coast Regional Council for permission to release this Technical Note.

reducing geotechnical uncertainty