



Australian Government
Geoscience Australia

**Certificate of Verification of a Reference Standard of a Position-Measurement in Accordance with
Regulation 13 of the National Measurement Regulations 1999 and the National Measurement
Act 1960**

Name of Verifying Authority:

Name: National Geospatial Reference Systems
Organisation: Geoscience Australia
Address: Corner Jerrabomberra Ave and Hindmarsh Drive, Symonston ACT 2609 Australia
Telephone: (02) 6249 9111
Facsimile: (02) 6249 9969
Email: geodesy@ga.gov.au

Client detail:

Name: Dr Volker Janssen
Organisation: Land and Property Information, NSW Department of Finance and Services, NSW
Address: 346 Panorama Avenue, Bathurst NSW 2795
Telephone: (02) 6332 8426
Facsimile: (02) 6332 8479
Email: Volker.Janssen@lpi.nsw.gov.au
Date of request: 09 August 2013

Description and denomination of standard of measurement:

The measurement was undertaken using an antenna LEIAT504 LEIS (International GNSS Service antenna naming convention) with the serial number 448 and refers to a point located 0.0000 m below the antenna reference point. This antenna is attached to a stainless steel plate on steel pillar via a 5/8 inch spigot thread. The station (4 character ID: UNSW) is located at the Electrical Engineering Building, UNSW, Kensington.

Permanent distinguishing marks:

Exempt under Regulation 16 (4)

Date of verification:

04 November 2013

Date of expiry of certificate:

03 November 2018



Accredited for compliance with ISO/IEC 17025. Accreditation No. 15002.

Value of standard of measurement:

Station (4 character ID): UNSW

South Latitude and its uncertainty of value:

$33^{\circ} 55' 3.63448'' \pm 0.008 \text{ m}$

East Longitude and its uncertainty of value:

$151^{\circ} 13' 54.63300'' \pm 0.008 \text{ m}$

Elevation above Ellipsoid and its uncertainty of value:

$86.9794 \pm 0.019 \text{ m}$

Geocentric Datum of Australia (GDA94) coordinates referred to the GRS80 ellipsoid being in the ITRF92 reference frame at the epoch 1994. The uncertainties are calculated in accordance with the principles of the ISO Guide to the Expression of Uncertainty in Measurement (1995), with an interval estimated to have a confidence level of 95% at the time of verification. The combined standard uncertainty was converted to an expanded uncertainty using a coverage factor, k, of 2.

Details of any relevant environmental or other influence factor(s) at the time of verification:

Uncertainty of the coordinates of the recognized-value standard of measurement of position (i.e. GDA94); and Uncertainty due to instability of the GPS antenna mounting and modelling of the antenna phase centre variations.

Signature: _____

04 November 2013

Dr John Dawson
NATA approved signatory

Section Leader
National Geospatial Reference Systems Section
Geoscience Australia

Signature: _____

04 November 2013

Mr Gary Johnston
Geoscience Australia approved signatory

Group Leader
Earth Monitoring and Hazards Group
Geoscience Australia

Being a person, or a person representing a body, appointed as a verifying authority under Regulations 71 and 73 of the National Measurement Regulations 1999 in accordance with the National Measurement Act 1960, I hereby certify that the above standard is verified as a reference standard of measurement in accordance with the Regulations, by the above-named authority.