



ISSUE 24, MAY 2015

Print on Demand map price reduction

In January 2015, the price of Print on Demand maps was reduced from \$66 to \$19.80, bringing them in line with other newly published GSNSW maps. They will now be printed on durable, tear-resistant media. [View our maps.](#)

Warwick–Tweed Heads 1:250 000 metallogenic map and metallogenic study — the end of an era

The [Warwick–Tweed Heads 1:250 000 metallogenic map](#), metallogenic study (explanatory notes) and mineral occurrence data sheets have now been published and are available separately. GSNSW started the metallogenic mapping program in the late 1960s and these publications mark the completion of all 1st edition 1:250 000 scale maps and explanatory notes. Metallogenic mapping will continue at the half million scale as an adjunct to new generation mineral potential mapping.

[Metallogenic Map](#): \$19.80

[Metallogenic Study \(explanatory notes\)](#): \$27.00

[Mineral Occurrence Data Sheets: Free in DIGS GS2014/1446](#)

Contact: geoscience.products@trade.nsw.gov.au

Broken Hill Special 1:250 000 metallogenic map

[This map shows 239 metallic, industrial and major hard-rock deposits in the district](#) and classifies them by size, commodity and deposit type. On the back is a poster featuring the mining history, geological history, mineral photos and a timeline of events.

Map (flat or folded format): \$19.80.

Contact: geoscience.products@trade.nsw.gov.au

Gosford–Lake Macquarie 1:100 000 geological map

The revised [Gosford–Lake Macquarie 1:100 000 geological map](#) is now available as Print on Demand only.

Contact: geoscience.products@trade.nsw.gov.au

Advanced Mineral Projects & Exploration Highlights

The January 2015 [Advanced Mineral Projects & Exploration Highlights](#) map is now available as an A3 hardcopy or [downloaded as a JPG](#).

Contact: geoscience.products@trade.nsw.gov.au

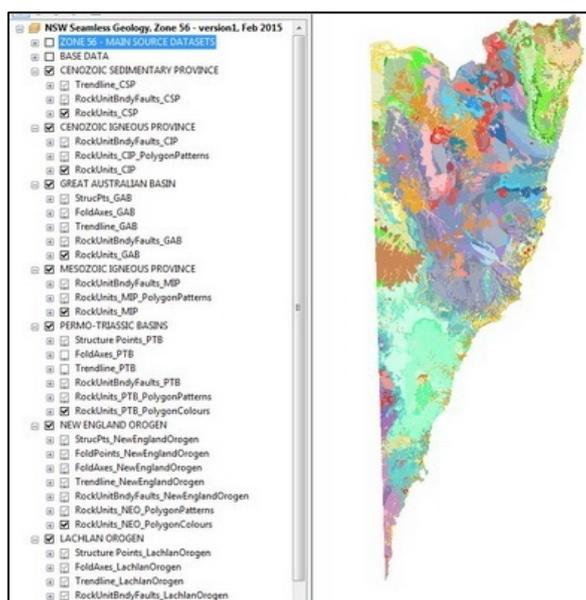
NSW Seamless Geology — UTM Zone 56 data package

The data package for UTM Zone 56 developed under the [NSW Seamless Geology Project](#) is a seamless compilation of the best available vector geology data for UTM Zone 56 in NSW. The data has been organised into a series of layers, or time slices, representing the major lithotectonic units. All layers have a consistent data structure and attribute schema from the GSNSW Statewide Geology Geodatabase (version 2). Base data (roads, railways, rivers, localities) is also provided.

Unlike static maps, the GIS format allows interrogation at the best available scale (1:25 000 in places). Users can generate 'areas of interest' maps with spatial and scale continuity across map joins.

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Statewide Geology Database: Gary Colquhoun, gary.colquhoun@trade.nsw.gov.au, 02 4931 6735



Display of UTM Zone 56 seamless geology coverage

Complimentary NSW Mineral Explorers Directory 2015

A redesigned [NSW Explorers Directory 2015 for DVD/USB](#) is now available. The interactive DVD which showcases mineral exploration and investment opportunities in NSW, now allows searching for active NSW exploration companies by commodity. It has information on current hot prospects, prospective ground, and active mines and developments. It contains data for geology, mineral occurrence, geophysics and exploration or mining titles as Google Earth KMZ files, ESRI shapefiles, MapInfo Tables and in Arc Reader PMF format.

Contact: geoscience.products@industry.nsw.gov.au for your free copy

Quarterly Notes 142 — Interpreting the Oaklands Basin

[Quarterly Note 142 — Interpreting the Oaklands Basin: morphology, stratigraphy and petroleum potential](#) presents a new detailed interpretation of the basin morphology, stratigraphy and petroleum potential of the Permo–Triassic Oaklands Basin in central southern NSW. It is a synthesis of all current data, focussing on the high resolution seismic data from surveys in 2006 and 2009. Interpretation of these data together with the oil and gas shows and limited maturation data support the possibility that a petroleum system could exist in the Oaklands Basin.

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Quarterly Notes 143 — Broken Hill special issue

Quarterly Note 143 contains 2 papers: Refined peak and retrograde metamorphic isograds for Broken Hill and Euriovie blocks *and* A concise geological history of the Broken Hill area. The first paper presents new metamorphic and facies isograd maps based on petrographic re-evaluation and a review of existing work, whilst the second paper provides a useful geological overview of the region.

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Commodity flyers

Four new commodity flyers covering *Iron, Silica, Silver and Bauxite* bring the total of new commodity flyers to twelve. [PDF downloads are available.](#)

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Geophysical images updated in 2015

Seven 1:1 500 000 statewide geophysical images published in 2007 have been updated. The 2015 versions include data from recent GSNSW regional geophysical surveys: 200720 Bendigo–Stalwell, 200721 West Thomson, 200920 Jerilderie–Oaklands Basin, 200921 Broken Hill, 201320 Riverina, 201321 Ardlethan, 1101 Southeast Lachlan, 1102 Murrumbateman, 1201 Grafton–Tenterfield and an open file private company survey in the New England area.

The statewide images are:

- Total Magnetic Intensity (TMI) Reduced-To-Pole (RTP)
- 1st vertical derivative TMI
- TMI RTP over tilt filtered TMI RTP
- Isostatically corrected Bouguer gravity
- Isostatically corrected Bouguer gravity over tilt filtered TMI RTP
- Ternary radioelement
- DEM

Geophysical imagery can be viewed using Google Earth™ through the [Geoscientific Data Warehouse](#) using the link 'Our data in Google Earth'. They can be downloaded onto mobile devices using the link 'Statewide maps for mobiles'. The updated datasets are also available on DVD.

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Mineral Resource Audit — presentations to government planners

The presentations phase of the project commenced 21 April. The project will engage all NSW local government councils as well as key regional staff of the NSW Department of Planning and Environment. The first official presentation was to Armidale Council Chambers. See [OTO Issue 18 for background information about the audit.](#)

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New drillcore accepted at department core libraries

View a [list of non-confidential drillcore](#) accepted at the [W B Clarke Geoscience Centre](#), Londonderry November- December 2014. The [E C Andrews drillcore facility](#) at Broken Hill accepted over 3000 m of core from 40 diamond drill holes from the Macquarie Drilling (formerly Silver City) core yard. The drillcore provides a unique coverage of particular sections of Broken Hill geology.

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Londonderry drillcore library extension update

The NSW Government Architects Office was appointed Principal Design Consultant in late 2014 for the \$5.987M New Frontiers funded extension of the [W B Clarke Geoscience Centre](#) drillcore storage facility at Londonderry. The Office delivered final design documentation to start the construction tender process in February 2015. Construction tenders closed 26 March after being advertised on the NSW government eTendering website.

[See details about the project, timelines and possible disruption to services](#)

Contact: Graham Butt, graham.butt@trade.nsw.gov.au, 0408 703 713

NSW Radiogenic Isotopes Database update

The NSW Radiogenic Isotopes Database was updated with 81 SHRIMP U–Pb dating results which were retrieved from recent Geoscience Australia reports. These samples were collected and analysed in collaboration with Geoscience Australia from GSNSW projects in the Lachlan Orogen and New England Orogen. The new and existing data can be accessed via the [Geoscientific Data Warehouse](#).

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East Riverina Mapping Project update

[Details of the project and periodic updates are available on the GSNSW website.](#)

Mapping highlights for the Ardlethan and Barmedman 1:100 000 map sheet areas so far are:

- Geochemical and isotopic sampling
- Structural analysis
- Studies of age diagnostic graptolite and conodont species in the Ordovician metasedimentary sequences are aiding regional biostratigraphy
- A sinistral shear system identified in the north of Barmedman 1:100 000 map area has implications for timing of movement along major fault zones
- Coherent lavas and volcanoclastic facies have been mapped in the Gurragong Volcanics
- An unconformity at the base of the Cocoparra Group has been mapped in several locations near Ardlethan

Dr Rob Hewson (RMIT) completed [a remote sensing review of spectral and geophysical datasets \(GS2015/0185\)](#) to assist mapping of the Ardlethan and Barmedman 1:100 000 map sheet areas.

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HyLogger™ unit update

Over 5000 m of drillcore from the [E C Andrews Drillcore Facility](#) at Broken Hill is being spectrally scanned at the [Londonderry HyLogger™](#) unit for the Broken Hill project which is partially funded by [NCRIS#2](#). The project will investigate the metamorphic and alteration mineralogy across the Broken Hill region. To date, over 2905 m from a range of prospects including Yanco Glen, Black Prince, Polygonum, Stephen Trig and Gardner's Creek have been scanned.

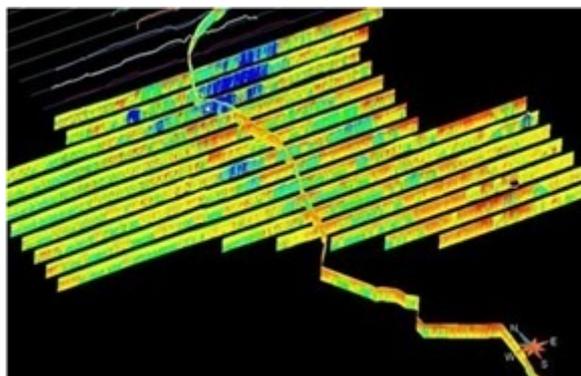
Scans of Cuttaburra and Kadungle drillcore have been uploaded to the [Auscope Portal](#) making a total of 100 drillholes available from the AuScope Discovery data portal compared with 7 at this time last year. Companies continue to participate by sending in their drillcore.

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Southern Thomson Project update

[Two inversion products of the VTEMplus® airborne electromagnetic survey \(AEM\) data](#) for the [Southern Thomson Project](#) are now available on the GA website. The AEM lines were approximately 100 km long and spaced at 5 km intervals in the region between Hungerford and Wanaaring. The perspective view provides conductivity information to a depth of 200 m below surface and indicates resistive granitic basement rises (blue) and conductive water-saturated sedimentary rocks of the Eromanga Basin (red-brown).

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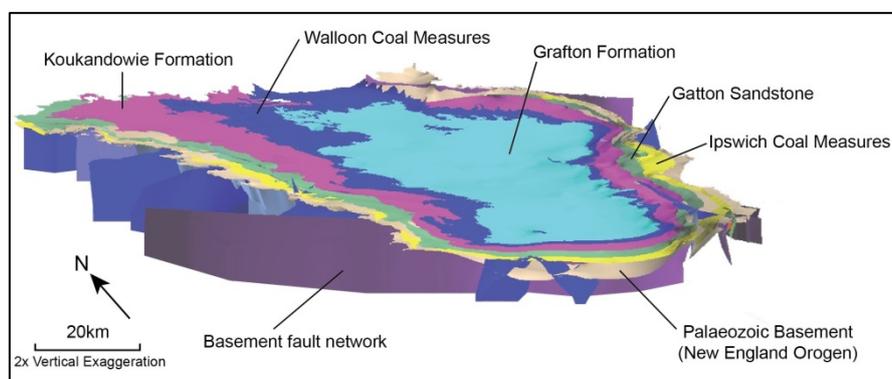


AEM conductivity depth pseudosections on 5 km spacing from Hungerford to Wanaaring showing new inversion results

Clarence–Moreton Basin 3D model update

The basin-scale structural and stratigraphic 3D model of the Clarence–Moreton Basin is almost complete. The model comprises a faulted basement shell infilled by six major lithological volumes separated by stratigraphic horizons representing the Ipswich Coal Measures, Gatton Sandstone, Koukandowie Formation, Walloon Coal Measures and Grafton Formation.

The project has improved our understanding of the Clarence–Moreton Basin architecture and its relationship to the underlying New England Orogen. The model highlights the complex structure of the Palaeozoic basement and lower basin infill in contrast with the broad, low angle sag geometry that characterises all the horizons from the Ipswich Coal Measures upward. The asymmetry in the south of the basin, that is consistent with bedding measured at surface, produces a thickening of lithological volumes west to east toward the axis of the basin synform. The distribution and propagation of structures, as well as lithological volume and relative dip improve the identification of fluid volume potential and flow pathways within the basin as well as the broad scale estimation of resource depth.



3D Clarence-Moreton Basin model

Products from the modelling will be available for download through the GSNSW online services.

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Contact: Felipe Oliveira (basin infill), felipe.oliveira@trade.nsw.gov.au, 02 4931 6675

Broken Hill Resources Investment Symposium 24–27th May

The [Resources Investment Symposium 2015](#) will look at new technology, the possibilities and movement towards space discovery, where the next boom will come from and where we should be investing. Uncovering the Curnamona is a special technical day hosted by GSNSW and GSSA.

[Program and Registration](#)

Exploration in the House and Minerals Council Exploration Forum 16–17 June

[Registration](#) and programs for [Exploration in the House](#) and [Minerals Council Exploration Forum](#) are now available.

ASEG-PESA Conference presentations and poster

GSNSW geoscientists promoted NSW geophysical data and geology at the Australian Society of Exploration Geophysicists – Petroleum Exploration Society of Australia combined conference held in Perth in February.

- Jamie Robinson talked on his recent 3D geology modelling: Constraining regional scale fault architecture in the southern New England Orogen: integration of seismic, multiscale edges and surface mapping.
- Astrid Carlton presented a poster "[Magnetic modelling of the Hay–Booligal Zone and its basement](#)"
- Rosemary Hegarty presented a joint poster with Michael Doublier (Geoscience Australia): [Defining major structures and their depth extent under cover in the southern Thomson Orogen, NSW.](#)

Success for New Frontiers Cooperative Drilling Program

Impact Minerals Limited drilling program at Red Hill Prospect near Broken Hill successfully intersected a 30 metre wide zone containing high grades of nickel and copper under the NSW Government [New Frontiers Cooperative Drilling Program](#).

[View Media story](#)

Geological Survey work underpins significant mineralisation discovery

Work by GSNSW which identified a prospective corridor for volcanic massive sulfide (VMS) ore deposits in central NSW contributed to [the discovery by Helix Resources](#) of a broad zone of copper-rich mineralisation. The prospective corridor includes the Girilambone and Tritton mines in the north and Tottenham in the south. It was identified by GSNSW following recent geological mapping of the Coolabah 1:100 000 map sheet. Associated mineral systems studies showed that VMS deposits in the region occur between marker horizons and are characterised by overlying exhalative rocks.

[View media story](#)

Contact: Phil Gilmore, phil.gilmore@trade.nsw.gov.au, 02 4931 6533

Federal Minister awards a grant to GSNSW for National Science Week 2015

The Federal Minister for Industry & Science (the Hon. Ian Macfarlane MP) awarded the GSNSW a grant of \$2500 to conduct the *Newcastle Time Walk* for [National Science Week 2015](#). It is one of 54 national events (12 in NSW). Geoscientists from the GSNSW will lead the public on a 6 km walk along the Newcastle foreshore, from Merewether to Nobbys Head.

[View media story](#)

Upcoming conferences

[2015 APPEA Conference & Exhibition 17–20 May, Melbourne](#)
[Broken Hill Resources Investment Symposium, 24–27 May, Broken Hill](#)
[Exploration in the House, 16 June, Parliament House, Sydney](#)
[NSW Mineral Council Forum, 17 June, Parliament House, Sydney](#)

[AMEC Convention 23–24 June, Perth](#)
[NSW Resources & Energy Investment 2015 Conference 27–28 July, Sydney](#)
[Mines & Wines, 2–4 September, Queanbeyan](#)
[China Mining 20–23 October 2015, Tianjin, China](#)

Staff movements

Charlotte Barry commenced work as a Geoscientist, Mineral Systems.

Products

[Geoscience Product Catalogue](#)
[Geophysical images and data](#)
Online sales: www.shop.nsw.gov.au
[Quarterly Notes](#)

Enquiries

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Disclaimer:

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