

# New from Old: Advancing Statewide Geophysics with Company Data

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### SUMMARY

The Geological Survey of NSW (GSNSW) are the custodians of both government and company geophysical data throughout NSW. The NSW Government has acquired a suite of over 60 airborne magnetic and ground gravity surveys since the 1990s, the data from which has been merged into statewide grids that are delivered, alongside the original survey data, through our web portal 'MinView'. These grids are available for Magnetics, Radiometric, Gravity and Digital Elevation Models.

Open-file exploration and mining company data dates back over 60 years, spanning a wide range of conventions, formats, and often missing large amounts of information.

GSNSW have committed to a large-scale quality assessment of these data to deliver curated open-file company data to the public via MinView and allow incorporation of good quality company data into the statewide geophysical imagery. This will improve the statewide images because the line spacing of the company surveys is typically much smaller than the regional surveys flown by the government.

**Key words:** geophysics, NSW, data delivery.

### INTRODUCTION

The Geological Survey of NSW (GSNSW) are custodians of data spanning many disciplines in earth science. The majority of these data are public domain and we have created systems to allow easy open access for resource exploration, land use decision making, research and other purposes. MinView is a web portal which allows search and discovery for many of these data, most notably government surveys. The aim of this project is to deliver company geophysics, not only for public use, but also for inclusion into statewide geophysical grids.

### METHOD AND RESULTS

#### Company geophysical data

Exploration and mining companies are required to submit all geophysical surveying data on an annual basis. Currently, this data becomes open-file when the title is relinquished. From 1 June 2021, all data will become open-file 5 years after submission.

Currently, company geophysical data are stored within GSNSW and delivered to interested parties (provided they are open-file) when requested through the geophysics products mailbox ([geophysics.products@geoscience.nsw.gov.au](mailto:geophysics.products@geoscience.nsw.gov.au)).

#### Accessing company data

A layer is available in MinView allowing searches over an area of interest. Navigate to <https://minview.geoscience.nsw.gov.au> and expand the 'Add Layer' option from the sidebar. Scroll to and select 'Geophysical survey locations' followed by 'Company geophysics'. From within the survey, locations can be selected as a whole or separated by geophysical technique. With one or more layers selected, the polygons on the map can be clicked which provides survey metadata. To determine whether the data for the desired survey is open-file or confidential, it can be searched through DIGS (<https://search.geoscience.nsw.gov.au/>) using the report or licence numbers. A map of company geophysical survey locations can be found in Figure 1.

#### Statewide geophysical grids and imagery

An example of the current statewide geophysical imagery for magnetics, overlain by boundaries of the government surveys used to create the merged image, is provided in Figure 2. These surveys date back to 1991 and have comparatively wide line spacing of ~250–400 m. The areas in this figure which are not overlain by polygons contain data from wide (~1500–1600 m) line spaced surveys acquired by the Bureau of Mineral Resources (now Geoscience Australia) from the 1950s through to 1993 and available through their online delivery portal GADDS ([http://www.geoscience.gov.au/cgi-bin/mapserv?map=/nas/web/ops/prod/apps/mapserver/gadds/wms\\_map/gadds.map&mode=browse](http://www.geoscience.gov.au/cgi-bin/mapserv?map=/nas/web/ops/prod/apps/mapserver/gadds/wms_map/gadds.map&mode=browse)).

Company surveys are generally smaller and more focussed than government surveys and typically sample with line spacing of between 25 m and 100 m. This provides a much more detailed image, mapping anomalous features not resolvable by the current statewide image. A large-scale data quality assurance and cataloguing project is underway for these company surveys, not only for public delivery, but also to assess the spatial extents and quality for each dataset. Once completed, the statewide image in Figure 2 will be completely recreated, encompassing the highest quality open-file data available.

### CONCLUSIONS

The GSNSW has begun a large-scale project to assess the company geophysical data under its stewardship. This project encompasses an easy-to-use means of accessing all open-file data and builds a platform for the creation of a new generation of statewide geophysical images/grids.

### ACKNOWLEDGMENTS

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**REFERENCES**

DIGS

<https://search.geoscience.nsw.gov.au/>

GADDS

[http://www.geoscience.gov.au/cgi-bin/mapserv?map=/nas/web/ops/prod/apps/mapserver/gadds/wms\\_map/gadds.map&mode=browse](http://www.geoscience.gov.au/cgi-bin/mapserv?map=/nas/web/ops/prod/apps/mapserver/gadds/wms_map/gadds.map&mode=browse)

MinView

<https://minview.geoscience.nsw.gov.au>

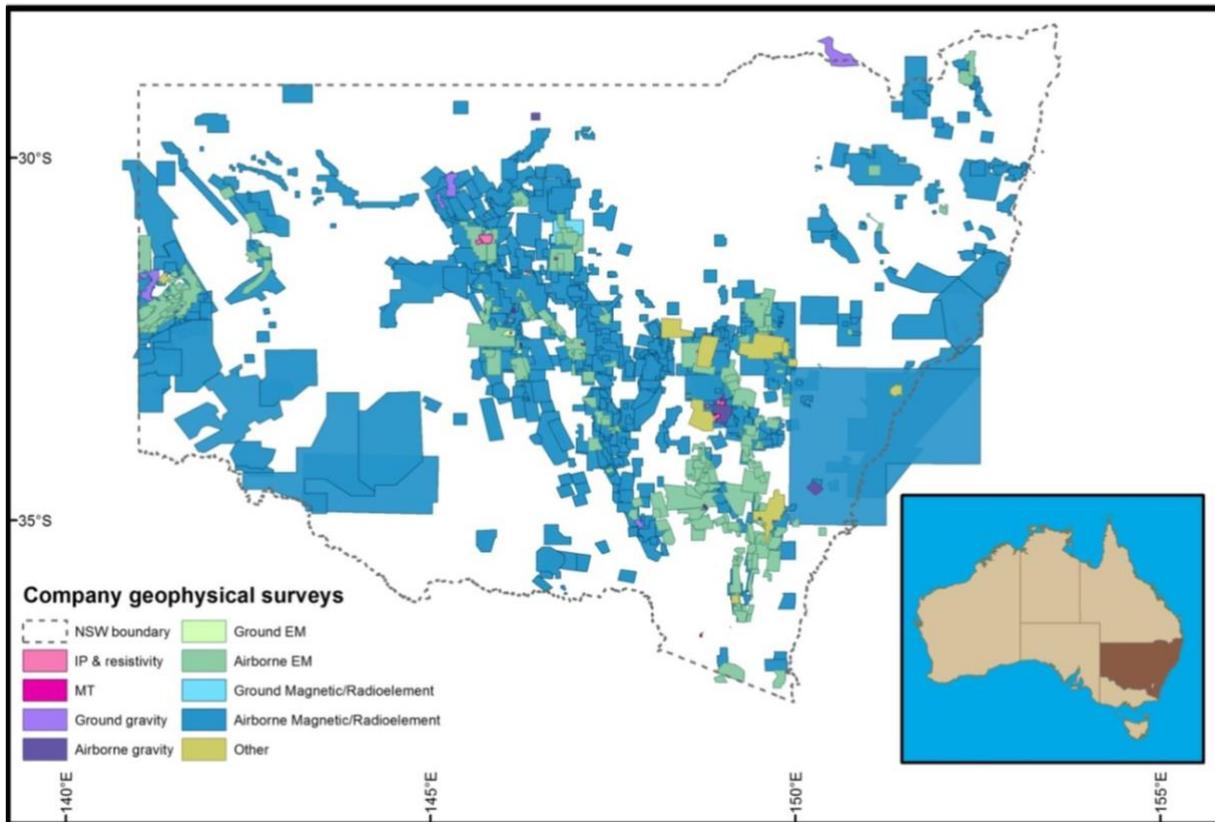
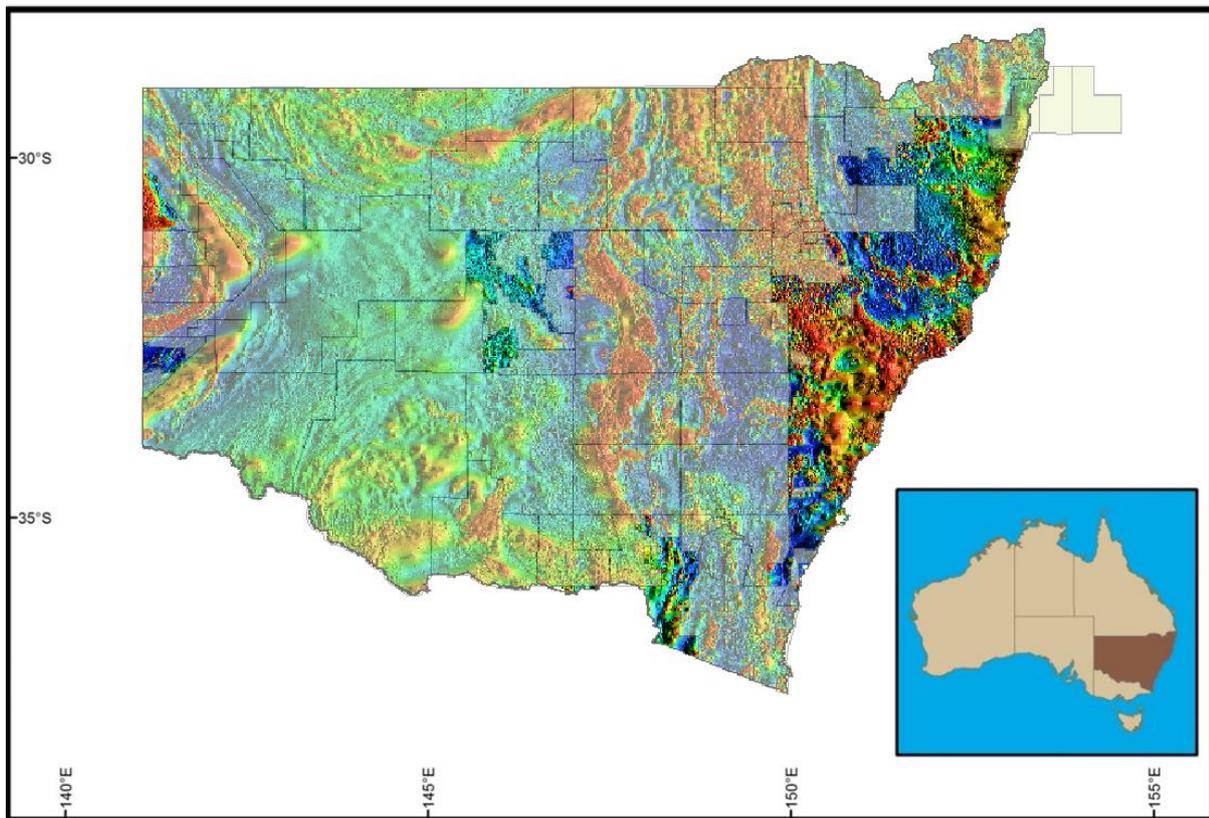


Figure 1. Map showing the boundaries of geophysical surveys submitted to the NSW Government by companies holding exploration and mining titles.



**Figure 2.** Map showing the boundaries of government magnetic surveys in NSW, overlain on the current statewide magnetic (TMI RTP) map.