

Introduction to the mineral deposit database (MinDep)

A key to unlocking information of the state's prospectivity

Rhiannon Lord



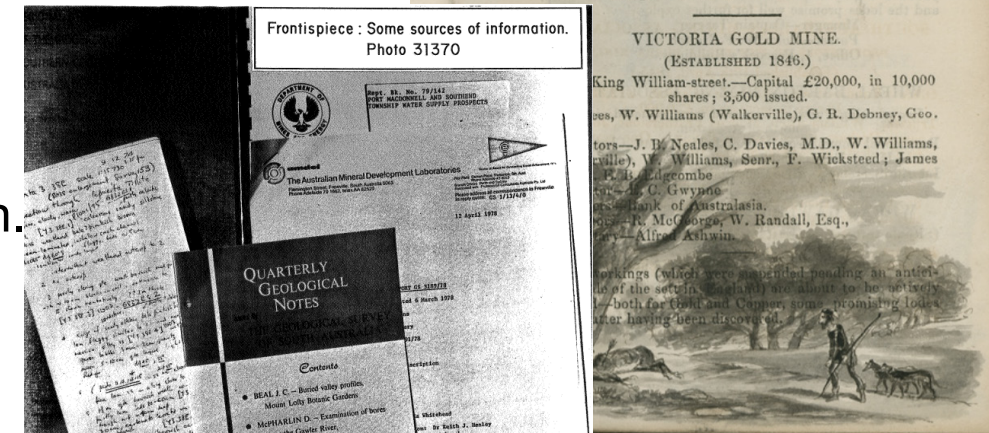
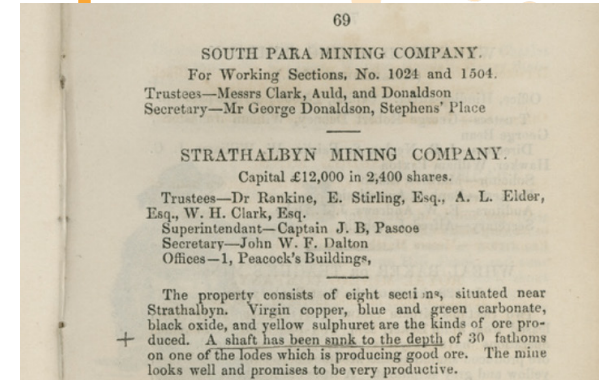
**GEOLOGICAL
SURVEY OF**
South Australia

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Capturing the geology of SA's mines and deposits

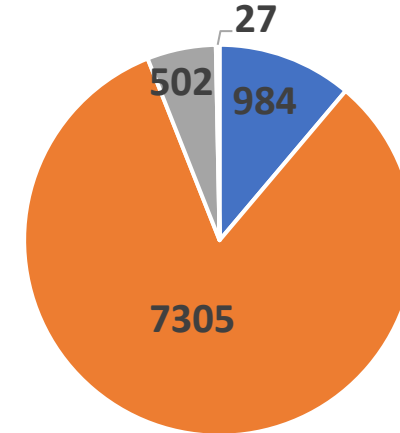
- In **1848** the **South Australian Almanac** was the first instant format used to capture and publish the geology of the mines around South Australia.
- In the **1970's** till **~1990** **Mineral Exploration Information Sheets (MEIS)** and card indexes of the mines and occurrences were compiled and organised around the map sheets.
- In the early **2000's** the **publication** of the geology of the mines database **went digital**, and the Mineral Deposit database began.
- As a **publicly accessible** database, through the **SARIG platform**.
- MinDep an important pre-competitive data source containing the geological information of the occurrences, prospects, mines and quarries around South Australia.



A rich source of information

- The **MinDep database** is a powerful precompetitive tool that contains the descriptions of the geology for the known **occurrences, prospects, quarries, mines and deposits in SA.**
- As of November 2025, MinDep holds around **8820 unique entries**, the majority classed as occurrences.
- The information for each entry can be found from a variety of sources including company reports and websites, ASX releases, open file envelopes, and university thesis (masters and PhD).

Number of unique entries currently in MinDep



■ DEPOSIT ■ OCCURRENCE ■ PROSPECT ■ TREATMENT SITE

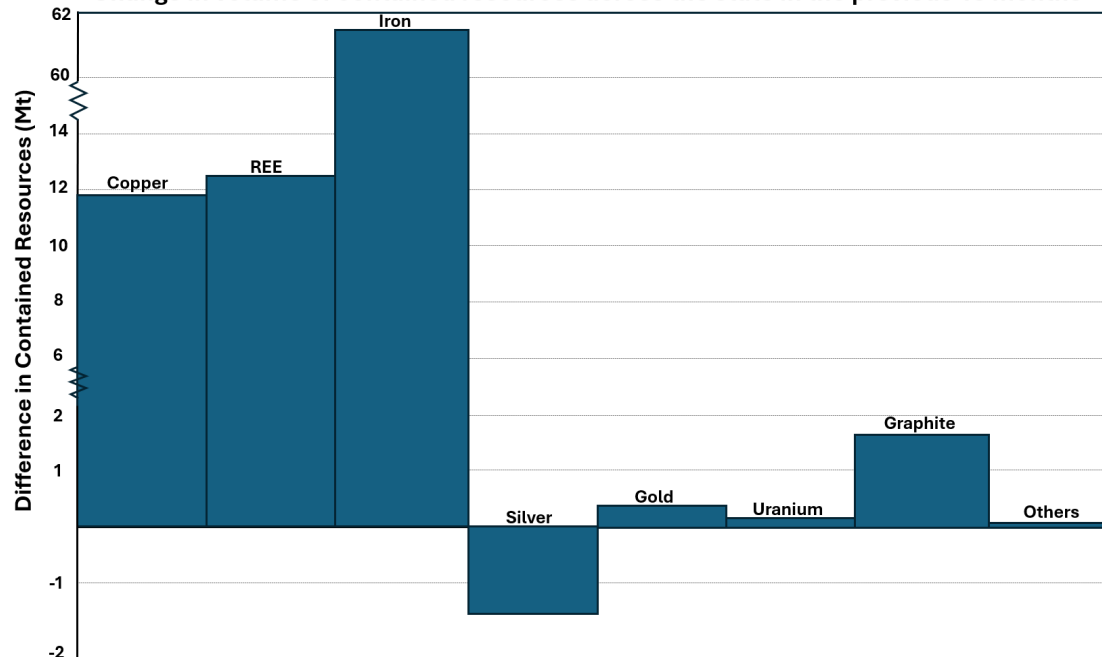


MinDep an evergreen database

During 2025:

- **14 new occurrence/prospects** added to MinDep database.
- **122 updates to exploration prospects** incl. information following on from ASX releases containing new exploration information. These are for a **variety of commodities** located across the state.
- Updates to **31 deposit scale mineral resources and reserves** values entries:
 - Adding **87 Mt of contained commodity resources** to the states known total in the last 18 months.

Change in volume of contained resources across the state in the previous 18 months



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Capturing the geology of the deposits



Details tab

- Contains information of the deposits type and status
- Discovery details, and a deposit summary.
- Mineral district and discovery year
- Contained commodities
- Main ore minerals and gangue minerals

Location tab

- Gives the location of the deposit



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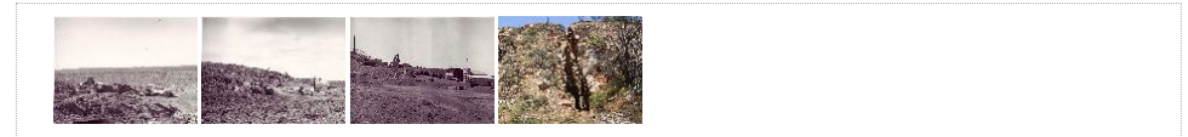
SA Geodata Database - Mineral Deposit Details

Deposit Number: 399 Deposit Name: TARCOOLA BLOCKS Deposit Type: Occurrence Status: Care/Maintenance

[Details](#) | [Location](#) | [Geology](#) | [Commodities](#) | [References](#) | [Historical Documents](#)

Deposit Synonyms	ALL NATIONS; BRANCH MINNIS; DEADMAN; FABIAN; GL 1654; GL 1665; GL 1666; IMPERIAL; LADY JANE; LITTLE BRANCH; LITTLE GEM; LLOYD; MCKECHNIES; ML 1987; ML 4650; ML 4667; ML 5179; ML 5300; PAXTON AND WOLFE; SULLIVAN; SULLIVANS TARCOOLA; WARD
Mineral District	TARCOOLA GOLDFIELD
Deposit Summary	Au mineralisation in quartz reefs in host metasediment of the Tarcoola Formation. Production from 1901-86 ~1,780kg gold bullion @ 43g/t Au. Later production from tailings from 1978-97 20kg bullion gold.
Deposit Description	TARCOOLA BLOCKS, gold was discovered by Fabian & Ward in 1900 in a quartz reef cross-cutting an EW-trending ridge of metasediment of the Mesoproterozoic Tarcoola Formation, with further gold-bearing reefs discovered soon after. Subsequently the mine was established on 10 x 20 acre contiguous leases taken out over the finds. Workings were extensive, consisting of many shafts, and extensive underground development, with the early activity, when the bulk of the mining occurred, being limited to above the water table. The majority of the gold recovered came from a swarm of steeply cross-cutting, NNE-trending quartz reefs, 19 in total, with the named reefs from east to west being Dedman, Branch Minnis, Lloyd, Little Gem, McKechnies, Western Branch, Fabian, Imperial, Ward, Paxton and Wolfe, and Sullivans 1-4. The lodes usually measured <1m in thickness. The most productive reefs were Ward, and Fabian, also significant production from Imperial, which merged with Wards along strike and at depth, and Sullivan No.1. Less productive reefs were Sullivan No.2, Paxton and Wolfe, Sullivans Nos.3 and 4, minor production only from the remainder. Younger andesitic dykes were found occupying the same fracture paths as the quartz reefs, displacing the reef in some places. The host metasediment included orthoquartzite, arkosic sandstone, carbonaceous siltstone, and shale, and trace tuff of the Fabian Quartzite. Petrology on a 1965 sample of mine spoils identified a hornblende, augite, biotite lamprophyre (SARIG sample # 64.513). Significant gold was also won from largely stratabound shears developed within beds of black shale. Terminology applied by the miners included, from west to east, all beds dipping ~30E was: No.4 Slatess, No. 3 (Back) Slatess within which was located Main Slide, No.2 (Front) Slatess within which was located Pug Seam, and No.1 Slatess. Most activity took place from 1900 to the early 1930s, but activity continued sporadically to 1986. Total underground production was estimated at 41,598 tonne treated for recovery of 57,000oz (1,779kg) of gold bullion, at an average grade of 43g/t Au. Estimated production from 1978-97 by treatment of the historic tailings was 642 oz (~20kg). Remaining resources at Tarcoola Blocks remain undetermined. Exploration by sampling of underground workings, and previous RC percussion drilling has confirmed the presence of remnant mineralisation, with best values including 8m at 142.8g/tAu from 38m in Imperial Reef, 4m at 53.1g/tAu from 30m in Welcome Home Reef, 3m at 50.2g/tAu from 33m in Sullivans Reef, and 3m at 26g/tAu from 153m in Fabian/Western Branch Reef. Sampling of underground workings indicates an erratic grade distribution. 2 bulk samples of lodes in the 1980s from Fabian Reef of 48.7 tonne gave average grades of 29.1g/tAu, and 42.5g/tAu. There is a report of a drill hole intersection in alluvials south of the Tarcoola Blocks of 4m at 97.8g/tAu.
Discovery Year	? 1900
Commodities	Gold
Ore Minerals	Gold
Gangue Minerals	Chalcopyrite, Pyrite, Quartz, Sphalerite

Mineral Deposit Images



◀ [First](#) | [Prev](#) | Result 8 of 1540 | [Next](#) | [Last](#) ▶

[Download list of codes and descriptions](#)

[Print Details](#) | [Back](#)

Capturing the geology of the deposits



Geology tab

- Information of the geological province, structures and settings.
- Relationship with the host rock and local controls.
- Information about the mineralisation and unit
- Host rock information, the zone, it's lithology and age
- The minerals associated with the deposit

SA Geodata Database - Mineral Deposit Details

Deposit Number: 3049 Deposit Name: CAIRN HILL Deposit Type: Deposit Status: Care/Maintenance

Details Location **Geology** Commodities References Historical Documents

Geological Province ? Mount Woods Inlier

Geological Setting

Regional Geological Controls Cairn Hills Shear Zone, a splinter shear of the Karari Fault Zone.

Local Ore Control Lithological-non specific Relationship to Host Rock

Classification

Scheme	Cox-Singer	Class	? REGM Deposits related to regionally metamorphosed rocks	Parent
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Mineralised Zone Lithology

Lithology (Dominant)	Magnetite-Rich Rock (Metasomatic)	Modifier	
Zone Stratigraphic Unit	? Mount Woods Complex	Map Symbol	Yq GIS Code Y-q
Strat Description	Paragneiss, psammitic, pelitic, magnetite-bearing, calc-silicate, BIF, meta-conglomerate; maximum depositional ages between c. 1860 and c. 1750 Ma, metamorphism c. 1736 Ma; orthogneiss, granitic; amphibolite; monzogranite, foliated at c. 1691 Ma.		

Host Rocks

Lithology (Dominant)	Gneiss	Modifier	mylonitic
Zone Stratigraphic Unit	Mount Woods Complex	Map Symbol	Yq GIS Code Y-q
Strat Description	Paragneiss, psammitic, pelitic, magnetite-bearing, calc-silicate, BIF, meta-conglomerate; maximum depositional ages between c. 1860 and c. 1750 Ma, metamorphism c. 1736 Ma; orthogneiss, granitic; amphibolite; monzogranite, foliated at c. 1691 Ma.		

Mineralogy

Minerals	Mineral Type	Relative Abundance	Weathering Product	Form and Distribution
AU	Gold	Ore	RARE <1 % by volume	N
CCP	Chalcopyrite	Ore	MINOR 5-29 % by volume	N
FELD	Feldspar	Gangue	TRACE 1-4 % by volume	N
MAL	Malachite	Ore	TRACE 1-4 % by volume	Y
MGT	Magnetite	Ore	ABUNDANT >70 % by volume	N
PY	Pyrite	Gangue	MINOR 5-29 % by volume	N
QZ	Quartz	Gangue	MINOR 5-29 % by volume	N

Mineral Deposit Images



Download list of codes and descriptions

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Capturing the geology of the deposits



Commodities Tab

- Information on the mineral commodities present in the deposit

References Tab

- Sources of the information used in the entry and their links where available

SA Geodata Database - Mineral Deposit Details

Deposit Number: 3049 Deposit Name: CAIRN HILL Deposit Type: Deposit Status: Care/Maintenance

Details Location Geology **Commodities** References Historical Documents

Commodity	Species	Significance
Au	Gold	Element
Cu	Copper	Element
Fe	Iron	Element
		Minor
		Minor
		Major

SA Geodata Database - Mineral Deposit Details

Deposit Number: 3000 Deposit Name: OLYMPIC DAM Deposit Type: Deposit Status: Active Mine

Details Location Geology **Commodities** References Historical Documents

Notification: Reference links are undergoing maintenance. Reports can be found in SARIG Catalogue

Document	Document ID	Document Details	Reports Database
Bulletin		CROSS, K.C., DALY, S.J. AND FLINT, R.B. OLYMPIC DAM DEPOSIT BULLETIN 54, THE GEOLOGY OF SOUTH AUSTRALIA 1993	SAMREF
Envelope	03073	Lalor, J.H., Smith, R.N., Evans, R.J., Grey, I.E., Robbins, T.W., Alter, H.W. Data release [made at SA Director of Mines' discretion] - Andamooka (part of the Stuart Shelf Project). Progress reports to licence expiry/renewal, for the period 2/3/1977 to 10/9/1979. South Australia. Department of Mines and Energy. Open file Envelope 1979	SAMREF
Envelope	03690	Hudson, G.R.T., White, G.H., Roberts, D.E., Arden, P.J., Mulholland, I.R., Woolard, C.A., Godden, N., Paschke, T., Jones, G.F., Duncan, D.M.P., Brown, W., Dwyer, J.R., Gan, L.C., Oreskies, N., Dalgarno, C.R., Connor, C.H.H., Marshall, A., Skeet, J., Reichman, L., Reeve, J.S. Data release [made at SA Director of Mines' discretion] - Olympic Dam deposit (located within the Olympic Dam Mining Feasibility Project Joint Venture Area on Andamooka EL 526 and its successors). Exploration progress reports issued until the grant of a special mining lease, for the period 17/11/197 South Australia. Department of Mines and Energy. Open file Envelope 1986	SAMREF
External Reference		Cherry, A.R., McPhie, J., Kamenetsky, V.S., Ehrig, K., Keeling, J.L., Kamenetsky, M.B., Mefre, S., and Apukhtina, O.B.	
External Reference		Schmandt, D.S., Cook, N.J., Ciobanu, C.L., Ehrig, K., Wade, B.P., Gilbert, S., and Kamenetsky, V.S.	
External Reference		Porter, T.M., (editor)	
MESA Journal	078	Wise, T., Reid, A.J., Jakica, S., Fabris, A.J., vander Wielen, S.E., Ziramov, S., Pridmore, D. Olympic Dam seismic revisited: reprocessing of deep crustal seismic using partially preserved amplitude processing. MESA Journal 2015	SAMREF
MESA Journal	088	Morrissey, L., Barovich, K., Hand, M., Howard, K., Payne, J., Reid, A. The final event in the long evolution of the Gawler Craton: new constraints on 1450 Ma metamorphism and magmatism. MESA Journal 2018	SAMREF
Other	395508	BHP Billiton Olympic Dam Corporation Pty Ltd Olympic Dam - Environment Protection and Management Plan 2016 - BHP Billiton Government of South Australia. Department of State Development. Program for Environment Protection and Rehabilitation 2016	SAMREF
Other	A2473240	BHP Billiton Olympic Dam Corporation P/L BHP Billiton - EPMP 2013 Government of South Australia. Department of State Development. Program for Environment Protection and Rehabilitation 2013	SAMREF
Report Book	2010/00016	Mefre, S., Ehrig, K., Kamenetsky, V., Chambefort, I., Maas, R., McPhie, J. Pb isotopes at Olympic Dam: constraining sulphide growth. In: Proceedings of the 13th Quadrennial IAGOD (International Association on the Genesis of Ore Deposits) Symposium, Adelaide, 6-9 April 2010. South Australia. Department of Primary Industries and Resources. Report Book 2010	SAMREF
Report Book	2010/00016	McPhie, J., Kamenetsky, V., Chambefort, I., Ehrig, K., Green, N. The origin of Olympic Dam: a revolutionary new view. In: Proceedings of the 13th Quadrennial IAGOD (International Association on the Genesis of Ore Deposits) Symposium, Adelaide, 6-9 April 2010. South Australia. Department of Primary Industries and Resources. Report Book 2010	SAMREF
Thesis		Johnson, J.P.	
Thesis		Gow, P.A.	

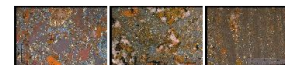
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Mineral Deposit Images



Publication and Reports for this Deposit Name

Locating MinDep

SARIG map | **Main Menu** | **SARIG catalogue**

South Australian Resources Information Gateway

Delivering statewide geoscientific and geospatial data

Quick links

- Search for a company mineral tenement holding
- Spatially search across multiple geoscientific datastores
- Search publications and reports
- View Web Services (WMS/WFS) listing

Explore map by theme

Browse map themes to select a map layer collection of interest.

Themes: New Releases, Mineral Resources, Energy Resources, Renewable Energy & Storage, Land & Water Management, Infrastructure

Recent releases: SA Geology 1st Edition, Oway and Poldia Basin Acreage Releases 2025, Hylogger data releases- last three months, Delamerian National Drilling Initiative (NDI), Hydrogen and Renewable Energy Act, 2024 regional gravity grids and data

SARIG map | **Main Menu** | **SARIG catalogue**

- South Australia Commodities**
Commodity resource, exploration and production dashboard
- Geoscientific Data**
Drilling, rock sample, field observations and databases
- Geochemistry**
View or download state-wide geochemistry data
- Mines and Deposits**
Mines and mineral deposits database
- Georeference**
Search and download publications and company reports
- New Releases**
New features, map layers and tools
- Web Services**
Publicly available OGC standard web services
- Discovery Trails**
Step through and discover South Australia's Geology

SARIG map | **Main Menu** | **SARIG catalogue**

Home > Mines and Deposits

Mines and Deposits

South Australian mines and mineral deposits database

Mines and Deposits (MINDEP)

Search and query the Mineral Deposit Database containing over 6500 South Australian mines and mineral deposits

Search Options: Advanced Search, Quick Search, Spatial Search, Activate Map Layers



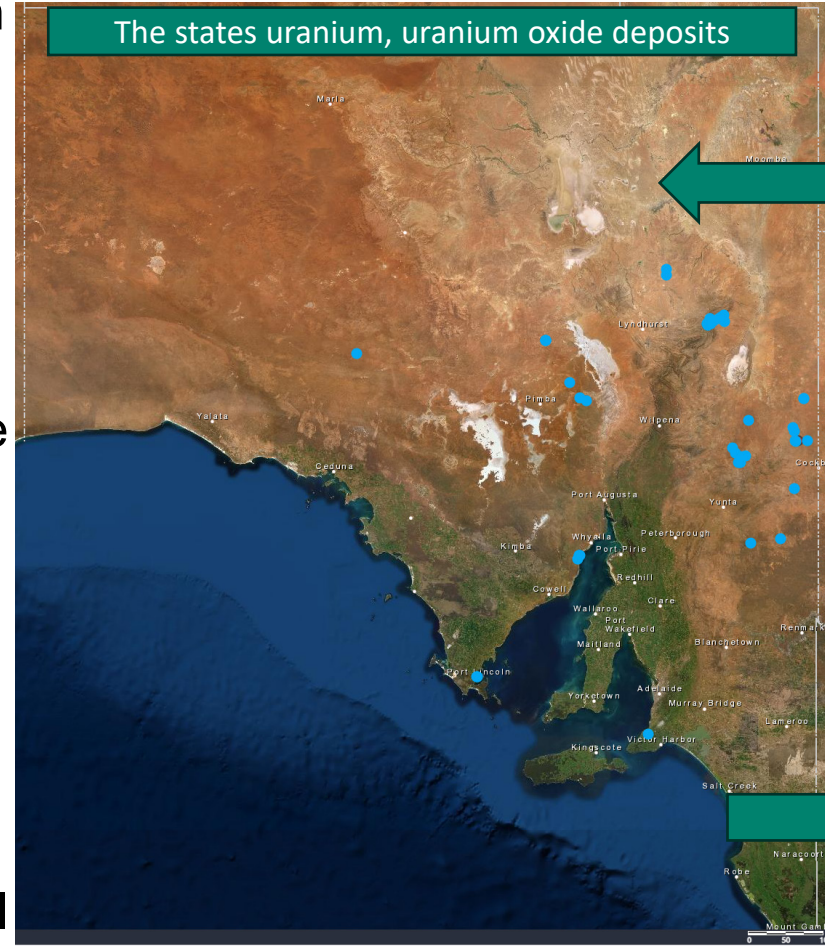
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Regional Exploration Tool

- The results from the database search are displayed as in a **tabular form**, containing a link to the MinDep page for each unique entry.
- Alternatively, this can be **visualised on the SARIG platforms map page**, highlighting the entries that match the search criteria.
- The MinDep entries and information can be **visualised** with any of the layers available within the SARIG mapping tool. Allowing for the interpretation of the **known occurrences** along side the **regional geology and structure, geophysics and geochemistry**.

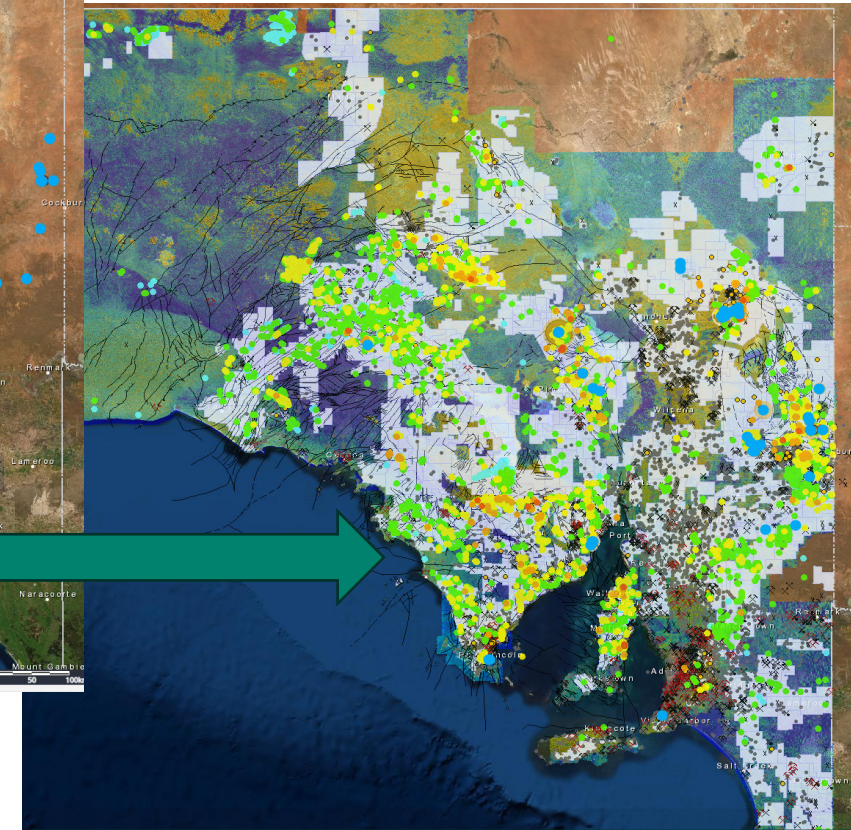
SA Geodata MINDEP Database - Mineral Deposit Search Results (45 Records Returned)

Deposit Number	Deposit Name	Deposit Other Names	Discovery Year	Commodities	Deposit Type	References	Historic Mine Card
285	LOMAX		1954	Uranium, Uranium Oxide	Deposit	✓	
286	HOSPITAL	GIBSON 1	1954	Uranium, Uranium Oxide	Prospect	✓	
383	WARRIOR		1978	Uranium, Uranium Oxide	Deposit	✓	
952	RADIUM HILL		1906	Uranium, Radium, Rare Earths, Uranium Oxide, Mica	Deposit	✓	✓
957	SPRING HILL	ML 4166; ML 4167; RL 1; RL 2	1953	Uranium, Uranium Oxide, Gold	Deposit	✓	✓
989	JAGGED ROCKS		1958	Uranium, Uranium Oxide	Deposit	✓	
990	MOUNT VICTORIA	CROCKER - MOUNT VICTORIA; MT VICTORIA	1954	Uranium, Uranium Oxide, Rare Earths	Deposit	✓	✓
991	CROCKER ORIGINAL	CROCKER CAMP SOUTH; CROCKER WELL; RL 126	1953	Uranium, Uranium Oxide, Thorium	Deposit	✓	
992	CROCKER EASTERN	CROCKER MAIN EASTERN; CROCKER WELL; CROCKERS CENTRAL	1978	Uranium, Uranium Oxide	Deposit	✓	
993	CROCKER CENTRAL	CROCKER SOUTHWESTERN; CROCKER WELL	1978	Uranium, Uranium Oxide	Deposit	✓	



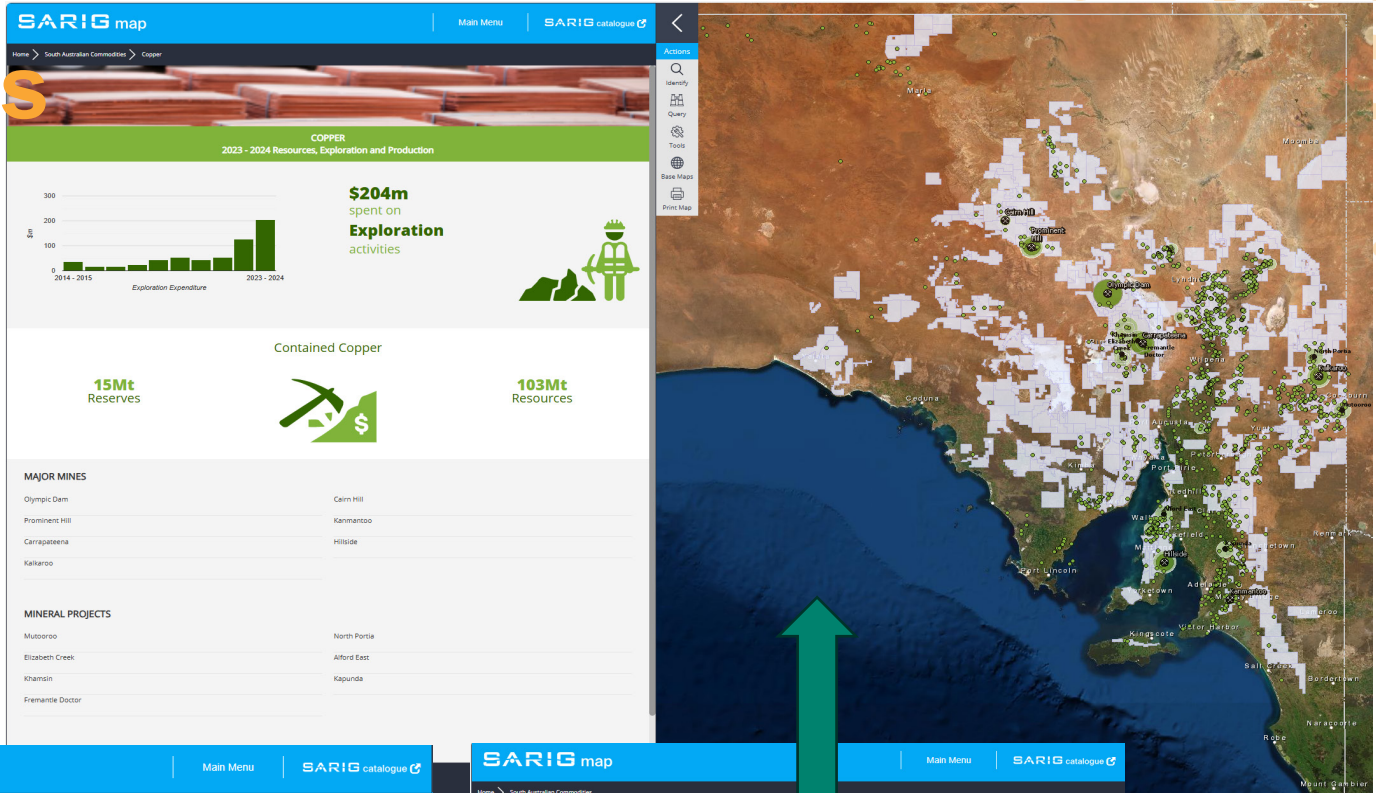
SA Geodata - Data Downloads 1 2 3 4 5

[View results in map window](#) Print Back



Searching SA's dashboards

- Quick links to the **main mineral commodity pages**. Other commodities can be searched within the map layers
- **Contains current contained tonnages and exploration trends**, exploration expenditure along with the major mines and projects listed.
- Includes the associated map of the occurrences and major mines and projects (and resource bubbles).



SA's own critical minerals dashboard

- Two dashboards are accessible through the SARIG platform to find information on South Australia's mineral deposits:
- The **critical minerals dashboards** contains the states **geological data** and **resources/ reserves information** on various **metallurgic minerals**, filterable to the deposit type, status and deposit name.
- The MinDep database is one of the **sources of information linked** to these products allowing the database to be **searched** through this platform.



Government of South Australia | ENERGY & MINING | South Australia's strategic critical minerals | Powered by SARIG

Copper

Commodity layer: All

Infrastructure layer: Railway layer

Name	Mineral deposit links	Resource type	Resource class	Ore Resource	Ore Resource Unit	Resource grade average
Carrapateena	Mineral deposit links	JORC mineral resource	Measured	140000000	Tonne	1.10
Kanmantoo	Mineral deposit links	JORC mineral resource	Total mineral resource	6400000	Tonne	1.09
Olympic Dam	Mineral deposit links	JORC mineral resource	Total mineral resource	11320000000	Tonne	0.71
Prominent Hill	Mineral deposit links	JORC mineral resource	Total mineral resource	180000000	Tonne	0.90
Adair South	Mineral deposit links	Non-JORC	Estimated	155000	Tonne	0.85

Reserve and resources

- 14M Reserve contained product by tonnes
- 86M Resource contained product by tonnes
- 83 Number of mineral occurrences

Mineral occurrence filters

Deposit name: All

Deposit type: All

Deposit status: Multiple sele...

Mineral occurrence deposit status

- Care/ Maintenance: 14.46%
- Exploration: 4.82%
- Recreation: 19.28%
- Rehabilitated: 10.84%
- Unknown: 37.35%
- Seasonal: 7.23%

The future of the database

- MinDep is an **evergreen database** being continuously updated with new information as it becomes available.
- **Major updates to entries** following **DEM focused projects** (e.g. Eyre Peninsula)
- **Key component for assessing areas and indicating potential** within the GSSA regional and focused exploration workflows.
- Within the SA Geodata site, **additional information** is **captured** in the databases backend but **currently not available** through the SARIG platform. **Future developments** possibly to contain more information released through MinDep.
- **Resources and reserves numbers** captured and **published through** other databases produced by the GSSA.



Final words

- South Australia has been at the **forefront of developing and publishing tools and databases to make exploration easier and reducing risk** in the state with **readily available data and geological information** of the states known occurrences, prospects and mines.
- The mineral deposit database is easily accessible database containing a robust description of the **known occurrences, prospects, quarries, mines** (at various stages of operation) **and projects**.
- Data compiled and reported using variety of **sources** from **company reports** and **ASX releases, open file data, published journal articles** and **university projects**
- **Key tool** for a **regional exploration** and **prospect evaluation**.
- **Known occurrences searched and visualised** alongside the other mapping products within SARIG platform or downloaded to be visualised in company mapping tools.
- Provides the **information** regarding the state's known **resources and reserves**.



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Acknowledgement of Country

As guests here on Kurna land, the Department for Energy and Mining (DEM) acknowledges everything this department does impacts on Aboriginal country, the sea, the sky, its people, and the spiritual and cultural connections which have existed since the first sunrise. Our responsibility is to share our collective knowledge, recognise a difficult history, respect the relationships made over time, and create a stronger future. We are ready to walk, learn and work together.



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Disclaimer

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