

# AUSTRALIAN EXPLORATION

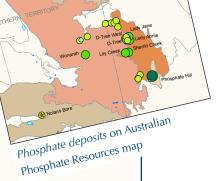
FEBRUARY 2010

REVIEW OF EXPLORATION FOR THE YEAR 2009

An extended version of this review is available at www.ga.gov.au

## **OVERVIEW**

- » Australian mineral exploration spending in 2008–09<sup>(1)</sup> fell by 9.7% to \$2223.1<sup>(2)</sup> million of which 38% was spent on the search for new deposits<sup>(3)</sup>.
- » Spending fell in all States but rose in the Northern Territory; Western Australia dominated with 56% of Australian mineral exploration spending.
- » Iron ore became the dominant target with 26% of exploration spending while base metal's share fell to 23%.
- » Exploration results were announced for a wide range of commodities from across the country including the initial resource estimate for the Merlin molybdenum-rhenium deposit in Queensland, significant drill intersections at the DeGrussa and Bentley base metals prospects in Western Australia, the Thunderball uranium prospect, Northern Territory and interesting gold intersections from the Handpump prospect in the remote West Musgrave region in Western Australia.



## Exploration review

Australian and global mineral exploration reached record highs in 2008 but dropped significantly in 2009 as a consequence of the Global Financial Crisis. Australian mineral exploration expenditure fell by 9.7% from a record \$2461 million in 2007–08 to \$2223 million in 2008–09 according to data from the Australian Bureau of Statistics. In constant dollar terms this was a fall of 12.4% from the 2007–08 record (figure 1). World-wide mineral exploration fell more sharply.

The fall in exploration expenditure was smaller than anticipated as major reductions in expenditure on base metals (\$519 million: down 33.8%), gold (\$438 million: down 26.1%) and uranium (\$185 million: down 20%) were offset by spending on exploration for iron ore (\$589 million: up 30.9%), coal (\$297 million: up 26.6%) and 'Others' which includes commodities such as phosphate, manganese, tungsten and molybdenum (\$154 million: up 39.6%).

<sup>&</sup>lt;sup>1</sup>Australian financial year from 1 July 2008 to 30 June 2009.

<sup>&</sup>lt;sup>2</sup>All monetary references in this paper are to Australian dollars unless otherwise stated.

<sup>&</sup>lt;sup>3</sup>Exploration spending on the search for new deposits covers exploration for previously unknown mineralisation or exploration on known mineralisation which is not yet classified as a resource.

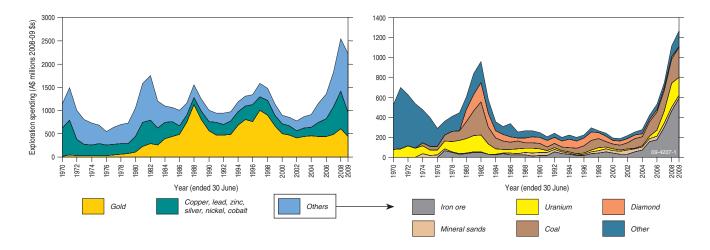


Figure 1. Australian mineral exploration expenditure in constant 2008–09 dollars (Based on Australian Bureau of Statistics data deflated by Consumer Price Index).

The Northern Territory was the only Australian jurisdiction which recorded an increase in exploration in 2008–09 with spending rising by 10%. The fall in Western Australia was limited to 1% as iron ore exploration underpinned activity in that jurisdiction. High levels of coal exploration in New South Wales and Queensland limited the overall falls in exploration expenditure in those states to 7.7% and 11.6% respectively. In the other states, with limited or no exploration for iron ore and/or coal, mineral exploration expenditure fell by more than 30%.

Drilling fell by 19% to 7 888 000 metres in 2008–09. Drilling in greenfields areas fell significantly down by 31% to 2 720 000 metres compared to brownfields which fell by 11% to 5 167 000 metres, confirming the continuing dominance of brownfields exploration.

World non-ferrous mineral (including base metals, precious metals, diamonds, uranium but not coal or iron ore) exploration budgets reported by the Metals Economics Group fell from a record US\$14.4 billion in 2008 to an estimated US\$8.4 billion in 2009, a fall of 42%. This directly reflects the impact of the global economic downturn which resulted in reduced demand for most minerals, especially base metals, and consequent substantial price falls for many of those commodities.

Some 30 Initial Public Offerings (IPO) on the Australian Securities Exchange in 2009 were fully or partially for mineral exploration in Australia. This is a substantial reduction from the 49 listed in 2008. Mineral IPO raisings totalled \$540 million in 2009. While the number of companies listed remains low there were signs that restraints on capital raising may be easing with some 80% of the new company listings occurring in the last quarter of 2009. In addition to IPOs, over \$6.5 billion dollars were raised by the minerals sector for a range of purposes including exploration, development, and the provision of working capital over half this amount was raised by private placement.

## **EXPLORATION**

#### **ANTIMONY** (FIGURE 2)

#### **New South Wales**

Anchor Resources Ltd reported a successful resource drilling program at the **Wild Cattle Creek** antimony deposit, part of the Bielsdown Project, which confirmed depth and strike extensions to the existing resource. Better intersections included 11.5 m @ 2.32% Sb and 0.34g/t Au, and 4.4 m @ 3.19% Sb and 0.73g/t Au. Anchor reported an Inferred Resource for Wild Cattle Creek of 880 000 t @ 1.99% Sb for 17 500 t Sb.

#### COPPER, LEAD, ZINC, SILVER (FIGURE 2)

#### **New South Wales**

Cobar Consolidated Resources Ltd reported results from drilling at the **Wonawinta** silver project, 80 km S of Cobar, aimed at upgrading the existing Inferred Resource of 44 Moz Ag to measured and indicated status. Intersections reported included 7 m @ 116g/t Ag, 2.8% Pb, including 1 m @ 560g/t Ag, 9.6% Pb; 10 m @ 287g/t Ag, 2.9% Pb, including 4 m @ 566g/t Ag,

0.7% Pb. An upgraded resource estimate of 33.5 Mt @ 53g/t Ag, 0.76% Pb for contained metal of 57.1 Mozs Ag and 254 000 t Pb was announced.

CBH Resources Ltd reported an upgrade to resources at the **Rasp** Mine at Broken Hill with contained zinc and lead increasing by 225% due to increased tonnage and grade. Resources at Rasp total 16.5 Mt @ 6.6% Zn, 5.1% Pb and 89g/t Ag and are a combination of the Western Mineralisation, Centenary Mineralisation, Zinc Lodes and the Main Lode Remnants. An initial Ore Reserve of 3.2 Mt @ 6.0% Zn, 4.6% Pb and 64g/t Ag was announced.

(continued on page 5)

Table 1: A selection of Australian mineral discoveries since 2000.

Year	State	Deposit/Project	Commodities	Status
2000	WA	West Musgraves	Ni, Cu, Co	Exploration; Preliminary resource: 392 Mt @ 0.3% Ni, 0.33% Cu
2000 + later	WA	Golden Grove orebodies	Cu, Pb, Zn, Ag	Mine; June 2008 resource: 1.4 Mt Zn, 0.8 Mt Cu, 0.13 Mt Pb, 44 Moz Ag, 1 Moz Au
2000 + later	WA	Flying Fox orebodies	Ni	Mine; Current resource: 245 955 t Ni
2000	NSW	Hera	Au, Zn, Pb, Cu, Ag	Exploration; Current resource: 3.3 Mt @ 2.7g/t Au, 3.4% Zn, 2.7% Pb, 0.18% Cu, 15g/t Ag
2001	NSW	Wyoming	Au	Exploration with feasibility study in progress; Current resource: 0.8 Mozs Au
2001	SA	Prominent Hill	Cu, Au	Mine; Current resources: 2.5 Mt Cu, 6.3 Moz Au, 21.4 Moz Ag
2002	WA	Jaguar	Cu, Pb, Zn, Ag,	Mine; Current ore reserve: 1.11Mt @ 2.9% Cu, 0.53% Pb, 7.4% Zn, 93g/t Ag
2002	WA	Copernicus	Ni, Cu, Co	Mine not currently operating; Current resource: 6000 t Ni, 4000 t Cu, 200 t Co
2004	WA	Trident	Au	Mine; Current resource: 1 Moz Au
2004	SA	Jacinth & Ambrosia	Mineral sands	Mine construction; Production due mid-2010
2005	WA	Tropicana	Au	Feasibility studies; Current resource: 5.01 Moz Au
2005	SA	Four Mile	U	Decision to mine Four Mile West; Current resource 3.9 Mt @ $0.37\%$ $U_3O_8$
2005	SA	Tripitaka	Mineral sands	Pre-feasibility study; Current resource: 28 Mt @ 2.3% Heavy Minerals (HM)
2005	SA	Carrapateena	Cu, Au	Exploration; 905 m @ 2.1% Cu, 1.0g/t Au
2005	WA	Caliwingina	Fe	Exploration; 875 Mt @ 56.9% Fe; Channel Iron Deposit; Pilbara Region
2006	SA	Gullivers	Mineral sands	Exploration; Part of Eucla Basin Mineral Sands Project
2006	QLD	Mount Carlton	Au, Ag, Cu	Feasability study; Current resource: 25.7 Mt @ 1.65g/t Au, 44g/t Ag, 0.28% Cu
2006	NSW	McPhillamys	Au	Exploration; 366 m @ 1.85g/t Au
2006	WA	Cooljarloo North	Mineral sands	Scoping study completed; Current resource: 260 Mt @ 2.4% HM
2006	QLD	Rocklands	Cu	Feasibility study; Resource 25 Mt @ 1.57% Cu, 818ppm Co and 0.2g/t Au
2007	WA	Spotted Quoll	Ni	Mine; Current resource: 2 Mt @ 6.2% Ni
2007	WA	Cyclone & Hurricane	Mineral sands	Exploration; Current resource for Cyclone 98 Mt @ 2.88% HM; Eucla Basin
2008	SA	Mojave	Mineral sands	Exploration HM grades from 1-22.2% HM; Eucla Basin
2008	VIC	Chewton	Au	Exploration: Inferred resource of 686 000 ozs Au
2008	VIC	Stavely	Cu, Pb, Zn, Ag, Au	Exploration: Inferred resource 47 300 t Cu
2008	QLD	Merlin (Mt Dore)	Mo, Re	Exploration: 13 Mt at 0.8% Mo, 14g/t Re, 0.2% Cu and 4.8g/t Ag.

## GOVERNMENT PROGRAMS

#### **GEOSCIENCE AUSTRALIA**

Geoscience Australia continued its \$59 million five-year geoscience program. The new Radiometric Map of Australia was launched and the 5th edition of the Magnetic Anomaly Map of Australia will be released in March 2010. A 380 km seismic and magnetotelluric traverse was completed over the southern Georgina Basin and the eastern Arunta region and interpretation results from the 2007 North Queensland Project were released. Processed AEM data were released for the Paterson Province and Pine Creek Inlier. Sample collection for the National Geochemical Survey of Australia was completed.

#### **NEW SOUTH WALES**

The New Frontiers initiative has a budget of \$16.5 million for three years from 2008 to 2011. The initiative includes programs studying areas poorly explored in the past, or under cover, such as the Koonenberry Belt and the Thomson Orogen. Both of these regions have recently received a significant boost in EL applications following the release of high resolution geophysical data and geoscience mapping programs. The 2010 program includes the acquisition of new high resolution geophysics over the south east of the state, which holds exploration opportunities for gold and base metals.

#### **NORTHERN TERRITORY**

The BRINGING FORWARD DISCOVERY initiative is a four-year, \$14.4 million program that commenced in 2007–08. It includes extensive regional gravity surveys and field-based geological mapping and prospectivity assessments, with an emphasis on under-explored 'greenfields' regions such as the Arunta region in central Australia. The initiative also provides funding for collaborative drilling with explorers, along with collaborative funding for regional-scale geophysical surveys and improving web-based delivery of information.

#### **QUEENSLAND**

The SMART EXPLORATION and SMART MINING – FUTURE PROSPERITY programs with funding of nearly \$50 million from 2005–06 to 2009–10 are providing new data including airborne magnetic and radiometric, gravity, deep seismic, airborne hyperspectral surveys and geological mapping programs. The program includes funds for collaborative drilling with explorers. The CARBON GEOSTORAGE initiative is a \$50 million collaborative program to search for sites for carbon dioxide storage, and the \$5 million COASTAL GEOTHERMAL ENERGY initiative will drill holes to identify areas of high geothermal gradient close to existing transmission lines.

#### **SOUTH AUSTRALIA**

The Plan for Accelerating Exploration (PACE) is a seven-year, \$30.9 million initiative to increase exploration and mineral production by ensuring that the South Australia is regarded as a premier destination for resource exploration and development investment. PACE's highly successful collaborative drilling program continued in 2009 and is supplemented by PACE Geochronology, a program designed to date key mineral systems and host rocks identified by exploration companies. PACE also partnered the GOMA frontier drilling program in the north-western Gawler Craton, retrieving new basement information, assay results and HyLogger spectral data.

#### **TASMANIA**

2009–10 is the final year of TasExplore, a four-year \$5.05 million program consisting of \$4.1 million for new geoscientific information and \$0.95 million for promotion of exploration opportunities. Aeromagnetic and radiometric data have been acquired over NE Tasmania and interpretive reports published.

Updated geological mapping has been completed in the central North and is now published. 4286 gravity stations have been measured in NE Tasmania and on Flinders Island. Mapping is close to completion in NE Tasmania and on southern King Island. One aim of the project is an upgraded 3D geological model of NE Tasmania.

#### **VICTORIA**

The three-year, \$9 million Gold Undercover initiative was completed in 2009. It delivered new geoscience information to help explorers look for gold deposits under the sedimentary cover in northern Victoria. The program aimed to: (a) capture and interpret new data on geophysics, crustal architecture, geochronology, geochemistry, mineralogy and gold deposit models in central and western Victoria; (b) estimate probable undiscovered gold endowment, and (c) improve geological databases and provide better access to geoscience data. Reports and associated data may be downloaded at www.dpi.vic.gov. au/minpet/store. The four-year, \$5 million Rediscover Victoria initiative, comprises a drilling grant project that reimburses exploration companies a proportion of approved drilling costs, and the 3D Victoria project that will produce a 3D model of the State.

#### **WESTERN AUSTRALIA**

In April 2009 the Western Australia Government announced funding of a five-year, \$80 million Exploration Incentive Scheme (EIS) to encourage exploration in Western Australia. Most of the six broad programs under the EIS are focused in under-explored greenfield regions. Major components of the Scheme are the completion of the State's coverage of airborne magnetic surveys at 400 metre or less line spacing, a major expansion of the area covered by gravity surveys, Government co-funding of innovative exploration drilling by companies in under-explored areas, stratigraphic drilling, deep seismic lines, 3D geological mapping, and improving access to Aboriginal land for exploration.

Argent Minerals Ltd continued exploration at its **Kempfield** project. Intersections included 86 m @ 102.8g/t Ag; 88 m @ 48.1g/t Ag, 0.40% Pb, 1.73% Zn, and 48 m @ 133.2g/t Ag including 10 m @ 303.2g/t Ag and 2m @ 618g/t Ag. The company announced a Measured, Indicated and Inferred near surface resource of 2.7 Mt @ 100g/t Ag, 0.4% Pb, 0.7% Zn and 27% barite with an additional Measured, Indicated and Inferred resource below 70 m of 1.9 Mt @ 72g/t Ag, 0.9% Pb, 2.1% Zn and 23% barite.

#### Northern Territory

Redbank Copper Ltd released results from drilling at the **Punchbowl** prospect in its Redbank project, near the Queensland border. The holes returned intersections including 31 m @ 2.5% Cu from 182 m including 10 m @ 4.4% Cu from 202 m; 25 m @ 2.4% Cu from 100 m including 4 m @ 5.3% Cu from 110 m and 4 m @ 3.5% Cu from 120 m. Redbank subsequently announced increased resources for the project, including Punchbowl, totalling 6.24 Mt @ 1.5% Cu.

Rox Resources Ltd announced the results of drilling to test the open pit potential of the **Myrtle** zinc-lead prospect, 20 km S of the McArthur River mine. Results included 9 m @ 3.44% Zn and 1.28% Pb from 41 m and 10 m @ 3.23% Zn, 1.32% Pb.

#### Queensland

CuDeco Ltd reported significant mineralisation throughout the year from drilling at the **Rocklands** project near Cloncurry. Typical intersections reported from the Las Minerale prospect included 27 m @ 0.60% Cu, 964ppm Co and 0.13g/t Au; 36 m @ 1.41% Cu, 36ppm Co and 0.20g/t Au, and 42 m @ 0.99% Cu, 19ppm Co and 0.16g/t Au.

Ivanhoe Australia Ltd announced that drilling at the **Swan** high-grade copper-gold zone at the Mount Elliott Project, in northwest Queensland, returned intersections including Eastern Flank 342 m @ 1.21% Cu and 0.80g/t Au and 114 m @ 0.92% Cu and 0.76g/t Au; and from the Western Flank 102 m @ 0.84% Cu and 0.52g/t Au, 128 m @ 0.82% Cu and 0.48g/t Au, and 135 m @ 1.25% Cu and 0.76g/t Au.

Kagara Ltd reported results from underground drilling at the **Balcooma** copper deposit. Better results included 15.9 m @ 7.9% Cu, 16.1 m @ 4.9% Cu and 7.7 m @ 8.1% Cu. This drilling aimed to convert an Indicated Resource of 1.6 Mt to a reserve.

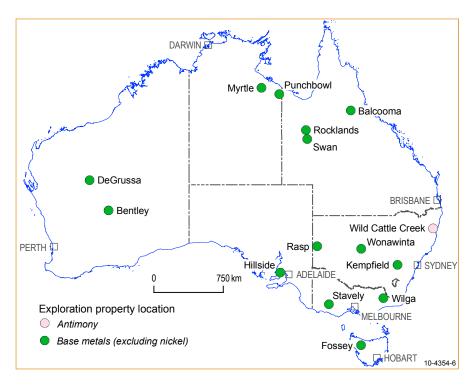


Figure 2: Selected base metal (excluding nickel) exploration projects 2009.

#### South Australia

Rex Minerals Ltd announced that drilling at its Hillside Project on the Yorke Peninsula, returned high-grade copper-gold intersections. Drill results reported for the Zanoni Fault Zone included 259 m @ 1.7% Cu and 0.4g/t Au which included 26 m @ 4.4% Cu and 0.9g/t Au, and 75 m @ 3.3% Cu and 0.8g/t Au. Later results included drilling on the Songvaar structure which returned intersections of 71 m @ 1.5% Cu and 0.4g/t Au, which included 29 m @ 2.2% Cu and 0.5g/t Au; 33 m @ 0.7% Cu and 0.9g/t Au, and 28 m @ 1.1% Cu and 0.6g/t Au.

#### **Tasmania**

Bass Metals Ltd reported an updated Indicated and Inferred Resource estimate for the **Fossey** Zone of 0.8 Mt @ 9.9% Zn, 5.8% Pb, 0.4% Cu, 137g/t Ag and 2.5g/t Au. These results increased the confidence in the resource estimate with a major shift in tonnages from the Inferred to Indicated classification with 86% of the resource now classified as Indicated.

#### Victoria

Jabiru Metals Ltd upgraded resource estimates for the **Wilga** and Currawong deposits at Benambra. The upgraded estimate is a combined Indicated and Inferred Resource of 12.5 Mt @ 2.1% Cu, 4.4% Zn, 0.7% Pb and 38g/t Ag, with over 90% in the Indicated Resource category.

Beaconsfield Gold NL (now BCD Resources NL) continued drilling at the **Stavely** project in western Victoria and reported intersections including 35 m @ 3.7% Cu from 24 m at the Junction 1 prospect, 3 km south of the Thursdays Gossan prospect which has an Inferred Resource of 10.6 Mt @ 0.45% Cu.

#### Western Australia

Sandfire Resources NL reported encouraging copper-gold mineralisation from its **DeGrussa** prospect in the Doolgunna Project, 150 km NE of Meekatharra. Intersections included 6.1 m @ 21.4% Cu, 1.7g/t Au and 40.1g/t Ag; 17.0 m @ 11.9% Cu, 3.3g/t Au and 34.1g/t Ag, and 8.8 m @ 27.1% Cu, 5.1g/t Au, 60.4g/t Ag. These were in addition to an earlier 10.7 m @ 26.2% Cu and 1.7g/t Au. Other results reported included 5.1 m @

15.0% Cu, 3.7g/t Au and 36.2 m @ 9.4% Cu, 3.7g/t Au, both from Conductor 1 located 200 m E of DeGrussa.

Jabiru Metals Ltd announced results from drilling at the **Bentley** Prospect, 50 km NNW of Leonora. Massive sulphide intersections included 7 m @ 0.4% Cu, 24.1% Zn, 1.1% Pb, 218 g/t Ag and 1.2g/t Au and 74 m @ 13.1% Cu, 11.3% Zn, 0.6% Pb, 270g/t Ag and 0.8g/t Au. Others included 4.1 m @ 0.5% Cu, 28.2% Zn, 1.6% Pb, 1.1g/t Au and 322g/t Ag; 4.3 m @ 2.8% Cu, 23.3% Zn, 0.3% Pb, 1.7g/t Au and 195g/t Ag and 4.75 m @ 1.6% Cu, 30.4% Zn, 1.4% Pb, 1.3g/t Au and 364g/t Ag. Jabiru announced an Indicated and Inferred Resource for Bentley of 1.7 Mt @ 1.9% Cu, 12.0% Zn, 0.8% Pb, 0.8g/t Au and 148g/t Ag.

#### **GOLD** (FIGURE 3)

#### **New South Wales**

Alkane Resources Ltd reported encouraging drill intersections from the **McPhillamys** prospect, 35 km SE of Orange, where it is in joint venture with Newmont Australia Ltd. An intersection of 299 m @ 1.09g/t Au from 68 m included 207 m @ 1.38g/t Au from 160 m and 30 m @ 3.21g/t Au from 336 m. Another hole returned 135 m @ 1.00g/t Au from 41 m and 69.6 m @ 1.04g/t Au from 225 m.

Cortona Resources Ltd reported more encouraging drill intersections from its Majors Creek Project near Majors Creek. Intersections at Dargues Reef and Exeter Farm continued to highlight the potential of the area. At **Dargues Reef** an intersection returned 17 m @ 7.44g/t Au, 5.0g/t Ag and 0.1% Cu. At Exeter Farm, results included 19 m @ 6.62g/t Au, 7.0g/t Ag and 0.13% Cu from 114 m, and 3 m @ 7.3g/t Au from 179 m. The company will proceed with a Definitive Feasibility Study on the Dargues Reef Main Lode.

#### Northern Territory

Westgold Resources Ltd reported new drill results from the Western Zone at the **Rover 1** project 80 km SW of Tennant Creek, (adjacent to Adelaide Resources Ltd's Rover 1 project). Intersections included 128 m @ 1.2% Cu, 1.2g/t Au, 2.0g/t Ag, 0.07% Bi, 0.05% Co from 402 m; 13 m @ 3.7% Cu, 0.13g/t Au, 1.6g/t Ag, 0.13% Co from 433 m; and 7 m @ 4.1% Cu, 4.4g/t Au, 7.9g/t Ag, 0.40% Bi, 0.11% Co from 494 m.

Adelaide Resources Ltd reported that a hole at its **Rover 1** prospect near Tennant Creek returned two intervals of high-grade ironstone hosted mineralisation. The first was a copper-rich upper zone which yielded 55 m @ 3.36% Cu that incorporated narrower zones of higher grade including 9 m @ 8.00% Cu. A lower gold-copper zone returned 31 m @ 2.16g/t Au and 2.23% Cu including 2 m @ 23.24g/t Au and 1.87% Cu. In addition, a newly reported zone of 47 m @ 1.51g/t Au included 1 m @ 15.9g/t Au and 1 m @ 21.1g/t Au.

#### Queensland

At the **Cracow** gold mine near Theodore, drilling on the Kilkenny prospect produced significant intersections including 12.8 m @ 14.18g/t Au which included 2 m @ 79.4g/t Au. Newcrest Mining Ltd has 70% of the project and is the project manager and Lion Selection Ltd holds 30%.

Drummond Gold Ltd announced high-grade intersections from the **East Hill** prospect at the Yandan Gold Project 45 km W of Mt Coolon. Intersections included 13 m @ 5.91g/t Au which included 3 m @ 20.92g/t Au; 2 m @ 9.96g/t Au and 1.9 m @ 48.12g/t Au. A preliminary resource estimate for East Hill is an Inferred Resource of 4.1 Mt @ 2.4g/t Au for 308 000 ozs Au.

Kagara Ltd announced an upgrade of the gold resource at **Mungana**, near Chillagoe, to 16.8 Mt @ 1.29g/t Au, 0.22% Cu, 0.33% Pb, 0.55% Zn and 19g/t Ag at a 0.5g/t Au cut off. This resource is within a larger gold resource of 45.9 Mt @ 0.76g/t Au. Kagara's resource at the nearby Red Dome deposit increased to 45 Mt @ 1.0g/t Au, 0.3% Cu and 8g/t Ag.

#### South Australia

Southern Gold Ltd's drilling at its **Golf Bore** prospect, 40 km NE of the Challenger Gold Mine extended gold mineralised shoots down plunge. In the Central Zone intersections reported included 33 m @ 1.10g/t Au, including 5 m @ 2.13g/t Au and 9 m @ 2.26g/t Au; 27 m @ 1.15g/t Au and

17 m @ 1.00g/t Au. In the South Zone intersections included 13 m @ 1.01g/t Au from 82 m and 19 m @ 1.04g/t Au from 112 m.

#### **Tasmania**

Bendigo Mining Ltd reported an extension to mineralisation at the **Henty** Gold Mine with drill intersections including 9.1 m @11.8g/t Au, 3.5 m @ 34.5g/t Au and 3.0 m @ 8.7g/t Au. These were beneath the previously mined Darwin South Zone. The discovery consists of three pods of mineralisation, two of which are the continuation of the Darwin South orebody, and the third lies further into the hanging wall and offers significant size potential.

#### Victoria

GBM Resources Ltd announced a 76% increase to bring resources in its **Leven Star** deposit at the Malmsbury project, to an Inferred Resource of 104 000ozs Au. The deposit is reported to be open along strike and at depth with a current resource of 0.8 Mt @ 4.0g/t Au.

At the **Kangaroo Flat** mine at Bendigo, Bendigo Mining Ltd identified a sub-vertical zone of auriferous quartz veining crosscutting predominant structures. The zone is 10-15 m long, 3-5 m wide and more than 170 m high, with intersections including 3.7 m @ 105g/t Au and 5.0 m @ 10g/t Au.

Synergy Metals Ltd announced an Inferred Resource of 338 000 t @ 7g/t Au and 11g/t Ag at the **Glen Wills** project, and a further 112 000 t @ 2.6g/t Au in tailings at Glen Wills and 76 000 t @ 7g/t Au at the adjacent Sunnyside prospect.

#### Western Australia

Intrepid Mines Ltd announced that deep drilling at the **Paulsens** mine identified a down plunge highgrade component to the Voyager mineralisation. Drill intersections included 4 m @ 44.2g/t Au; 2.9 m @ 53.6g/t Au and 3 m @ 36.8g/t Au. Updated resource estimates for Voyager are: Indicated Resources of 204 000 t @ 13.7g/t Au for 89 700 ozs Au and Inferred Resources of 110 000 t @ 11g/t Au for a contained 39 000ozs Au.

Integra Mining Ltd reported high grade gold intersections from the **Maxwells** gold deposit in its Randalls

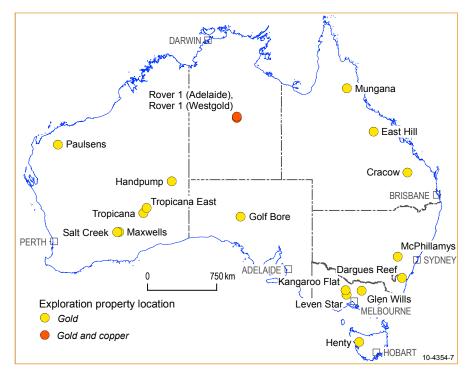


Figure 3: Selected gold exploration projects 2009.

Project, 60 km SE of Kalgoorlie. These included 4.2 m @ 43.22g/t Au which included 1.3 m @ 123g/t Au; 12.4 m @ 19.89g/t Au which included 6.7 m @ 31.92g/t Au, and 9.77 m @ 34.07g/t Au including 6.1 m @ 53.11g/t Au. Also at Randalls, Integra announced high-grade gold intersections from the **Salt Creek** deposit. These included 5 m @ 129g/t Au which included 1 m @ 627g/t Au; 26 m @ 2.13g/t Au, including 1m @ 19.55g/t Au, and 56.45 m @ 5.63g/t Au including 7.15 m @ 16.47g/t Au.

Independence Group NL and its partner AngloGold Ashanti announced an increase in the **Tropicana** open-cut resource, 230 km ESE of Laverton, from 4.05 Moz Au to 5.01 Moz made up of: Measured Resource of 19.9 Mt @ 2.38g/t Au for 1.53 Moz Au, Indicated Resource of 31.0 Mt @ 2.06g/t Au for 2.01 Moz Au and an Inferred Resource of 24.3 Mt @ 1.83g/t Au for 1.43 Moz Au for a total of 75.3 Mt @ 2.07g/t Au for 5.01Moz Au. The Tropicana Joint Venture approved the start of a Bankable Feasibility Study which will focus on a detailed assessment of owner and contract mining options and on optimising capital and operating costs.

Beadell Resources Ltd announced the discovery of a saprolite gold anomaly at its Neale Prospect in the **Tropicana East** project, immediately north of the AngloGold-Ashanti and Independence Group Tropicana tenements. Aircore drill samples returned values of 674ppb Au (0.67g/t) and 312ppb Au (0.31g/t) from different holes in the southern part of the tenement.

Beadell Resources Ltd announced that drilling at its **Handpump** prospect in the West Musgrave region in Western Australia near the border with South Australia, intersected significant gold mineralisation in rhyolitic breccia. An intersection of 65 m @ 0.83g/t Au from 10 m depth included a high-grade zone of 5 m @ 5.1g/t Au from 35 m depth within a zone of 15 m @ 2.3g/t Au from a depth of 30 m. The company commented that these results represent the first economic gold intersection in the Musgraves.

#### **IRON ORE** (FIGURE 4)

#### **New South Wales**

Carpentaria Exploration Ltd announced initial drilling results from its **Hawsons** magnetite project 60 km SW of Broken Hill. They include 115 m with a Davis Tube Recovery (DTR) concentrate grade of 69.8% Fe and an 18% recovery by weight.

#### Northern Territory

Western Desert Resources Ltd announced significant iron intersections from drilling in Area F of the **Roper Bar** project. They included 7 m @ 64.3% Fe,

<0.01% P, 4.0%  ${\rm SiO}_2$ , 2.1%  ${\rm Al}_2{\rm O}_3$  and 1.4% LOI; 9 m @ 62.7% Fe, <0.01% P, 4.3%  ${\rm SiO}_2$ , 2.0%  ${\rm Al}_2{\rm O}_3$  and 3.6% LOI, and 7 m @ 66.2% Fe, <0.01% P, 3.1%  ${\rm SiO}_2$ , 1.2%  ${\rm Al}_2{\rm O}_3$  and 0.7% LOI. Late in the year, the company announced an Inferred Resource for Area F East of 14.2 Mt @ 49.5% Fe, 22.0%  ${\rm SiO}_2$ , 3.2%  ${\rm Al}_2{\rm O}_3$ , 0.01% P and 2.5% LOI. A resource of 12.3 Mt @ 44.0% Fe, 24.6%  ${\rm SiO}_2$ , 1.8%  ${\rm Al}_2{\rm O}_3$ , 0.01% P and 8.8% LOI was reported for hematitic ore in Area E East.

#### South Australia

IronClad Mining Ltd announced drill results for its **Weednanna** Prospect in the Wilcherry Hill Project. The results, which extended the area of shallow Direct Shipping Ore, included 28 m @ 61.5% Fe, 6.5%  $\mathrm{SiO}_2$ , 2.15%  $\mathrm{Al_2O_3}$ , 0.011% P and 1.3% LOI from 20 m; 18 m @ 62.2% Fe, 4.2%  $\mathrm{SiO}_2$ , 1.8%  $\mathrm{Al_2O_3}$ , 0.035% P and 3.0% LOI from 26 m, and 16 m @ 62.3% Fe, 6.5%  $\mathrm{SiO}_2$ , 1.2%  $\mathrm{Al_2O_3}$ , 0.009% P and 0.1% LOI from 44 m.

Iron Road Ltd reported that drilling at its **Warramboo** project returned intersections including: 46 m @ 24.9% Fe, 12 m @ 23.0% Fe, and 4 m @ 21.6% Fe. Metallurgical work indicated high-quality concentrates averaging 70.1% Fe could be produced. The company reported an initial Inferred Resource of 110.5 Mt @ 19.4% Fe, 50.0% SiO<sub>2</sub>, 11.4% Al<sub>2</sub>O<sub>3</sub>, 0.09% P, 2.5% LOI.

IMX Resources Ltd reported results from drilling at the **Cairn Hill** mine, SE of Coober Pedy. All holes intersected massive magnetite with copper mineralisation. Intersections included 3 m 0.18% Cu, 0.43g/t Au, 11.52% Fe; 4 m @ 0.24% Cu, 0.05g/t Au, 44.12% Fe; 49 m @ 0.14% Cu, 0.02g/t Au, 54.81% Fe; and 3 m @ 0.05% Cu, 0.01g/t Au 57.98% Fe.

#### **Tasmania**

Grange Resources Ltd announced that additional magnetite lenses at its **Savage River** mine were discovered using ground magnetics and preliminary drilling confirmed the potential for additional high-grade lenses. The deposits are part of a series of discontinuous lenses that extend in a narrow belt for 25 km. The company announced a resource for the first lens of: Indicated Resources of 2.3 Mt which yields a DTR grade of 64% Fe and an Inferred Resource of 1.2 Mt which yields a DTR grade of 61% Fe.

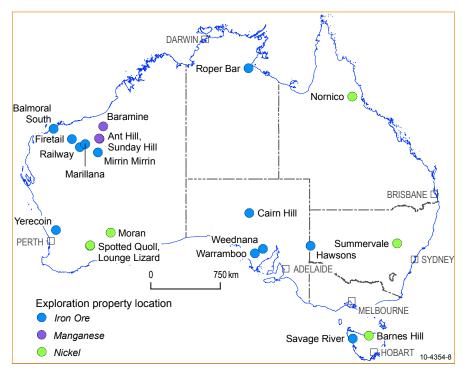


Figure 4: Selected iron ore, manganese and nickel exploration projects 2009.

#### Western Australia

The Fortescue Metals Group announced an increase in resources at the **Firetail** prospect in its Solomon group. The new estimate of Indicated and Inferred Resources is 300 Mt @ 58.4% Fe, 6.37% SiO<sub>2</sub>, 3.01% Al<sub>2</sub>O<sub>3</sub>, 0.114% P and 6.67% LOI more than double the previous estimate. Of the total, 120 Mt are Indicated Resources and 180 Mt are Inferred. It is predominantly bedded Brockman type ore. The Solomon Hub Resource was reported as 2.4 billion tones (Bt) @ 56.4% Fe, 6.9% SiO<sub>3</sub>, 3.3% Al<sub>2</sub>O<sub>3</sub>, 0.08% P and 8.4% LOI.

United Minerals Corporation  $\stackrel{\circ}{NL}$  advised that drilling at its **Railway** project adjacent to the BHP Billiton Area C Mining Lease returned an intersection of Marra Mamba Iron Formation mineralisation. This intersection, from 41.5 m depth yielded 147.78 m @ 61.1% Fe, 2.53%  $\mathop{\rm SiO}_2$ , 2.58%  $\mathop{\rm Al_2O_3}$ , 0.072% P, and 6.68% LOI in detrital and bedded mineralisation. Within the bedded mineralisation an intersection of 122.28 m @ 62.0% Fe, 2.13%  $\mathop{\rm SiO}_2$ , 1.88%  $\mathop{\rm Al_2O_3}$ , 0.073% P and 8.08% LOI was reported. The company reported an Indicated plus Inferred Resource estimate of 158.1 Mt @ 58.03% Fe, 5.07%  $\mathop{\rm SiO}_2$ , 3.42%  $\mathop{\rm Al_2O_3}$ , 0.063% P and 8.02% LOI.

Brockman Resources Ltd reported a 74% increase in resources at its **Marillana** Iron Ore Project in the Pilbara region. The total Indicated Resource rose to 605 Mt, comprising 551 Mt of beneficiation feed hematite detrital mineralisation (59-60% Fe grade after beneficiation) and 54.2 Mt of Direct Shipping Channel Iron Deposit mineralisation (57.4% Fe grade). In addition, Brockman reported Inferred Resources of beneficiation feed ore 773 Mt @ 42.2% Fe and an Inferred Resource of 13.6 Mt @ 56.1% Fe of Direct Shipping Channel Iron Deposit ore.

Giralia Resources NL reported encouraging drill results from the **Yerecoin** magnetite project 10 km E of New Norcia. An initial drilling program returned intersections including: 72 m @ 32.4% Fe, 52.4 m @ 31.6 % Fe, and 36.8 m @ 30.5% Fe. The company also reported that DTR and grind optimisation tests showed that the Yerecoin magnetite has favourable magnetic separation characteristics and is likely to yield a premium product with concentrate grades in excess of 71% Fe.

Australasian Resources Ltd announced a 44% increase in resources at the **Balmoral South** magnetite project to 1605 Mt including a Probable Ore Reserve of 859 Mt. The company reported that it had received approval for construction and operation of the project from the Federal Environment Minister. Balmoral South is 90 km SE of Onslow.

FerrAus Ltd continued exploration of its leases in the East Pilbara region including drilling on the **Mirrin Mirrin** prospect targeting the Marra Mamba Iron Formation. Intersections included 34 m @ 58.31% Fe from a depth of 104 m. Resources of direct shipping iron ore in the company's East Pilbara prospects were increased during the year to 166.6 Mt @ 58.6% Fe.

#### MANGANESE (FIGURE 4)

Montezuma Mining Co Ltd announced that Auvex Resources and Hitec Energy reported drill results from the Ant Hill and Sunday Hill Projects, 55 km ESE of Nullagine. At Ant Hill, intersections included 5 m @ 37.44% Mn, 15.95% Fe and 6.79% SiO<sub>2</sub>; 9 m @ 41.13% Mn, 15.05% Fe and 3.49% SiO<sub>3</sub>; and 10 m @ 38.69% Mn, 18.37% Fe, and 5.11% SiO<sub>2</sub>. Intersections from **Sunday Hill** were 6 m @ 35.44% Mn; 5 m @ 44.40% Mn, and 5 m @ 35.92% Mn. Subsequently an Indicated and Inferred Resource estimate released for Ant Hill was 4.911 Mt @ 20.3% Mn and 25.4% Fe using a 15% Mn cut-off. At Sunday Hill there is an additional 4.7 Mt @ 18.4% Mn also using a 15% Mn cutoff. Mining at Ant Hill commenced and Auvex advised that exports had commenced.

Shaw River Resources Ltd announced results from rock chip sampling at the **Baramine** Project, 250 km E of Port Hedland. Highergrade results included 10 m @ 50.3% Mn, 11 m @ 46.4% Mn, 3 m @ 51.5% Mn and 24 m @ 38.7% Mn. The first drilling at Baramine returned 45 manganese intersections between 15% and 38.7% Mn in 16 of the 61 holes. The company noted that the geological setting is similar to that at the Woodie Woodie Manganese Mine 80 km to the SE.

#### MINERAL SANDS (FIGURE 5)

#### South Australia

Iluka Resources Ltd reported that the **Jacinth-Ambrosia** project, in the Eucla Basin, produced its first heavy mineral concentrate. This brings into production a long life, zircon rich mineral sands mine. The Jacinth and Ambrosia mineral sands deposits were discovered by Iluka in the second half of 2004.

#### Victoria

Astron Ltd received government approval to commence mining the **Donald** deposit in western Victoria. It will produce 285 000 t per year of non-magnetic concentrate and 110 000 t of magnetic concentrate from 7.5 Mt of ore.

#### Western Australia

Infill drilling on the **Atlas** deposit at Image Resources NL's Cooljarloo project confirmed the shallow depth and continuity of mineralisation and grade over a strike length of 1 km in the central part of the resource. Significant results included 9 m @ 11.1% heavy minerals (HM) from 2 m; 4 m @ 13.4% HM from 1 m, and 3 m @ 21.5% HM from 3 m. Atlas has an Indicated Resource of 1.9 Mt @ 4.9% HM and an Inferred Resource of 9.7 Mt @ 5.8% HM for 660 000 t of HM.

Image Resources NL completed an extensive drilling programme at the **Serpentine Lakes** prospect in the Eucla Basin. Significant intersections reported include 17 m @ 4.4% HM from 13 m, including 3 m @ 10.7% HM from 18 m; 10 m @ 5.3% HM from 12 m, including 2 m @ 10.2% HM from 19 m; and 8 m @ 5.0 % HM from 26 m, including 2 m @ 12.4% HM from 28m.

Diatreme Resources Ltd announced a 50% increase in the resource estimate for its **Cyclone** deposit. The estimated total resource for Cyclone is 98.4 Mt @ 2.88% HM containing 2.8 Mt HM. This resource is classified as Measured (11.5 Mt @ 3.44% HM), Indicated (84.4 Mt @ 2.82% HM) and Inferred (2.5 Mt at 2.38% HM).

#### **MOLYBDENUM** (FIGURE 5)

#### Queensland

Ivanhoe Australia Ltd announced an independent Mineral Resource estimate for the **Merlin** molybdenum and rhenium deposit, part of its Mount Dore project, northwest Queensland. Resources reported at a 0.3% Mo cut-off were: Indicated Resources of 5.2 Mt @ 1.0% Mo, 16g/t Re, 0.2% Cu, 4g/t Ag for a contained 52 000 t Mo and 83 000 kg Re, and an Inferred Resource of 3.5 Mt @ 0.8% Mo, 14g/t Re, 0.3% Cu, 4g/t Ag for a contained 28 000 t Mo and 49 000 kg Re.

Ivanhoe Australia Ltd announced that further drilling in the Cloncurry tenements resulted in additional high-grade intersections. In the southern area of Merlin, new high-grade mineralisation at **Little Wizard** was identified with intersections of 1.4 m @ 9.3% Mo, 103g/t Re; 1.8 m @ 12.9% Mo, 178g/t Re, and 4.3 m @ 15.0% Mo, 188g/t Re. The company reported an Inferred

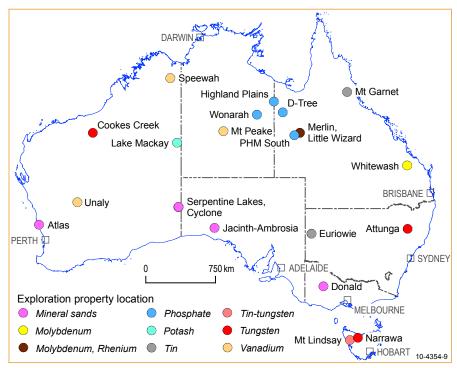


Figure 5: Selected mineral exploration projects 2009.

Resource for Little Wizard of 15 000 t @ 13% Mo, 160g/t Re, 1.7% Cu and 0.8g/t Au. This mineralisation appears to be an up-dip extension to the Merlin mineralisation.

Aussie Q Resource Ltd announced an initial mineral resource for the Gordon's molybdenum-copper prospect of 3 Mt @ 0.051% Mo, 0.07% Cu and 1g/t Ag. Gordon's is part of the Whitewash Molybdenum-Copper Project, near Monto which, including the Gordon's resource, has a total resource of 71.5 Mt @ 0.034% Mo, 0.1% Cu and 1.2g/t Ag containing over 24 000 t of molybdenum, over 70 000 t of copper and 2.6 Moz of silver. Drilling at Whitewash South returned encouraging intersections including 39 m @ 232ppm Mo, 0.23% Cu and 2.6g/t Ag, and 78 m @ 0.2% Cu, 157ppm Mo and 2.0g/t Ag.

#### **NICKEL** (FIGURE 4)

#### **New South Wales**

Jervois Mining Ltd announced the initial drilling results for its **Summervale** nickel–cobalt laterite project 25 km NW of Nyngan. They include: 13 m @ 1.41% Ni and 0.083% Co and 10 m @ 0.922% Ni and 0.034% Co including 5 m @ 1.145% Ni and 0.038% Co.

#### Queensland

An initial resource was announced by Metallica Minerals Ltd for the Kokomo nickel-cobalt deposit located in their **NORNICO** project, NW of Townsville. Combined with resources for the Bell Creek and Minnamoolka deposits, the new resource has increased NORNICO's total resource to 50.8 Mt @ 0.72% Ni and 0.06% Co. Kokomo has an Inferred and Indicated Resource of 12.2 Mt @ 0.67% Ni and 0.12% Co. Of this resource, 5.2 Mt @ 0.69% Ni and 0.13% Co is classified as Indicated with 7.0 Mt @ 0.66% Ni and 0.11% Co as Inferred.

#### Tasmania

Proto Resources & Investments Ltd reported results from drilling at the **Barnes Hill** deposit, 10 km NW of Launceston which included 9 m @ 1.10% Ni and 0.04% Co from 10 m; 16 m @ 1.05% Ni and 0.06% Co from 8 m; and 17 m @ 1.16% Ni and 0.09% Co from 13 m.

#### Western Australia

Independence Group NL reported ongoing drilling at the **Moran** deposit, 1.4 km S of the Long deposit, intersected both thick high-grade, massive and matrix nickel sulphides in the centre of the channel and narrow, high-grade intervals on the channel flanks. Indicative intersections in the centre of the lava channel included 5.7 m @ 4.3% Ni, 5.8 m @ 6.3% Ni, and 5.3 m @ 6.0% Ni. On the channel flanks results included 1.1 m @ 12.6% Ni. Later drilling returned 4.8 m @ 10.7% Ni, 5.1 m @ 10.8% Ni and 5.6 m @ 7.8% Ni. The company reported a resource for the deposit of 456 000 t @ 7.1% Ni for a contained 32 400 t Ni.

Western Areas NL announced a high grade Probable Ore Reserve at **Spotted Quoll** of 386 000 t @ 5.14% Ni for 19 840 t of contained nickel to 150 m vertical depth. The ore reserve in the Tim King Pit represents only 16% of the contained nickel within the current announced mineral resource at Spotted Quoll which is 125 460 t of nickel.

Kagara Ltd announced a high-grade Indicated and Inferred Resource of 1.149 Mt @ 4.62% Ni (53 100 t of contained nickel) for the **Lounge Lizard** deposit at Forrestania. This resource is contained within an Indicated and Inferred Resource of 7.549 Mt @ 1.37% Ni (103 300 t of contained nickel).

#### **POTASH** (FIGURE 5)

Reward Minerals Ltd reported that it had received an Inferred Resource estimate for the **Lake MacKay** potash deposit. Lake MacKay is a modern, playa lake in the Gibson Desert, straddling the Western Australia – Northern Territory border. The reported resource is: 4 780 400 000 Bench Cubic Metres (BCM) @ 4.3 kg  $\rm K_2SO_4$  per BCM for a total of 20.56 Mt of  $\rm K_2SO_4$ . The resource estimate was based on drill intersections.

#### PHOSPHATE (FIGURE 5)

#### Northern Territory

Phosphate Australia Ltd announced results from drilling at its **Highland Plains** project 500 km E of Tennant Creek, abutting the border with Queensland. Drill intersections included 10 m @ 24.7%  $P_2O_5$  from 8 m, including 4 m @ 31.1%  $P_2O_5$ , and 5 m @ 24.7%  $P_2O_5$  from 34 m. The company also announced an increased resource of 14 Mt @ 20%  $P_2O_5$  at the Western Mine Target Zone in the Highland Plains project.

Minemakers Ltd announced an updated resource for the **Wonarah** deposit, 200 km E of Tennant Creek, to an Indicated and Inferred Resource of 1105 Mt @ 18%  $P_2O_5$ . At a 15%  $P_2O_5$  cut-off, the resource is 399 Mt @ 21%  $P_2O_5$ . Minemakers Limited announced plans to bring the project into production in 2010.

#### Queensland

Krucible Metals Ltd a announced a revised Inferred Resource for **PHM South**, 150 km SE of Mount Isa and 5 km S of the Phosphate Hill Mine. At a cutoff grade of 10%  $P_2O_5$  the Inferred Resource is 19.3 Mt @ 19.0%  $P_2O_5$ . The Company is undertaking a scoping study to ascertain a range of economic parameters for mining and aims to produce up to 3.6 Mt at around 32%  $P_2O_5$  over a 6 year period, at an annual rate of 0.6 Mt.

Mt Isa Metals Ltd announced an Inferred Resource for the D-Tree deposit. The **D-Tree** Project is a joint venture between Mt Isa Metals (20%) and Legend International Holdings Inc (80%, manager). The resource, at a cut-off grade of 10%  $P_2O_5$ , is 135 Mt @ 13.8%  $P_2O_5$ . Elsewhere in the project area at D-Tree West the resource is 170 Mt @ 16.0%  $P_2O_5$ . An Inferred Resource of D-Tree Direct Shipping Ore, at a 25%  $P_2O_5$  cut-off, was reported at 1.0 Mt @ 29.4%  $P_2O_5$  and is in the high-grade portion of D-Tree North.

#### TIN, TUNGSTEN (FIGURE 5)

#### **New South Wales**

Peel Exploration Ltd reported that drilling at **Attunga** returned encouraging mineralisation at all prospects including a shallow, high-grade tungsten intercept from the Attunga deposit 20 km N of Tamworth. Results included: 27 m @ 0.54% WO<sub>3</sub>, 0.06% Mo from 19 m including 2 m @ 3.38% WO<sub>3</sub> and 0.27% Mo from 22 m; and 2 m @ 0.59% WO<sub>3</sub> and 0.03% Mo from 58 m. Mineralisation at the Attunga deposit consists of skarns developed at the contact of a lime-rich sequence with the Inlet Monzonite.

Carpentaria Exploration Ltd reported that work at the **Euriowie** project, 60 km N of Broken Hill, discovered tin pegmatites that have not been subject to modern exploration techniques and not drill tested. Ten traverses consisting of several one metre continuous rock chip samples were taken across the outcropping pegmatite. Results included 8 m @ 0.44% Sn including 1 m @ 1.21% Sn; and 6 m @ 0.36% Sn which included 1 m @ 1.60% Sn.

#### Queensland

Consolidated Tin Mines Ltd reported a major upgrade to resources at the **Mt Garnet** Tin Project to a total Measured, Indicated and Inferred Resource of 5.3 Mt @ 0.6% Sn. The resource upgrade is a result of extensive drill programs at key project areas at Mt Garnet: Gillian, Deadmans Gully and Windermere.

#### Tasmania

Venture Minerals Ltd announced a resource for the Mt Lindsay magnetite-tin project of Inferred Resource of 23 Mt @ 0.2% Sn for 49 000 t of contained tin. In addition, the Mt Lindsay Project has an Inferred Resource of tungsten of 5.7 Mt @ 0.3% WO<sub>3</sub> for 14 000 t of tungsten oxide. These resources are contained in, or immediately adjacent to an Inferred Resource of 30 Mt @ 33% Fe. Drill intersections reported include: 46 m @ 0.1% Sn, 0.61% WO<sub>3</sub> including 12 m @ 0.11% Sn, 1.69% WO<sub>3</sub>; 40 m @ 0.09% Sn and 0.4% WO<sub>3</sub>; and 18 m @ 2.2% Sn, 0.23% WO, which included 2 m @ 14% Sn and 0.26% WO<sub>3</sub>.

Frontier Resources Ltd announced that re-sampling and assaying of **Narrawa** gold-base metal deposit core returned encouraging results including 1 m @ 1.98% WO<sub>3</sub> within a broad low-grade geochemical halo that averaged 14 m @ 0.20% WO<sub>3</sub> Narrawa is 40 km SW of Davenport.

#### Western Australia

Hazelwood Resources Ltd's **Cookes Creek** tungsten project is located 70 km NE of Nullagine. The company released a resource estimate for the Big Hill deposit of Measured Resources of 1.99 Mt @ 0.27% WO\_3 and Inferred Resources of 1.02 Mt @ 0.23% WO\_3 for a total resource of 4.00 Mt @ 0.26% WO\_3. Hazelwood also reported that drilling at the McLeods target, 1.6 km W of the Big Hill deposit intersected coarse grained scheelite adjacent to old workings, including: 2 m @ 1.27% WO\_3 within a zone of 9 m @ 0.43% WO\_3; and 13 m @ 2.42% WO\_3 including 2 m @ 13.43% WO\_3.

#### **URANIUM** (FIGURE 6)

#### **Northern Territory**

Thundelarra Exploration Ltd reported drill intersections from the **Thunderball** uranium prospect, a discovery 140 km SE of Darwin. These included 11 m @ 3.4%  $U_3O_8$  including 4.6 m @ 8.0%  $U_3O_8$ ; and 15 m @ 1.5%  $U_3O_8$  including 1 m @ 20.3%  $U_3O_8$ . Mineralisation at Thunderball occurs as disseminated to massive uraninite in sheared and tightly folded tuffaceous metasediments. Thundelarra also announced an additional high-grade uranium discovery from rock-chip sampling 3.5 km SW of Thunderball.

Rum Jungle Uranium Ltd identified roll-front type uranium mineralisation associated with oxide copper on its **Mt Bundy** project 90 km SE of Darwin. The Anniversary Breccia is located 10 km NW of the Tom's Gully Gold Mine and uranium-copper mineralisation was intersected with better results including: 1 m @ 1769ppm  $\rm U_3O_8$  and 3.87% Cu within an interval of 5 m @ 570ppm  $\rm U_3O_8$  and 1.12% Cu. A large low-grade intersection of 53 m @ 250ppm  $\rm U_3O_8$  from 45-98 m depth included 26 m @ 339ppm  $\rm U_3O_8$  and 2557 ppm Cu.

NuPower Resources Ltd reported the first drill intersections from the **Eva** uranium-gold project, in the Murphy Inlier close to the Queensland border. Near-surface intersections included 27 m @ 0.77%  $\rm U_3O_8$  and 5.10g/t Au including 4 m @ 2.24%  $\rm U_3O_8$  and 17.72g/t Au; 20 m @ 0.416%  $\rm U_3O_8$  and 5.07g/t Au and 7 m @ 1.25%  $\rm U_3O_8$ , 4.79g/t Au.

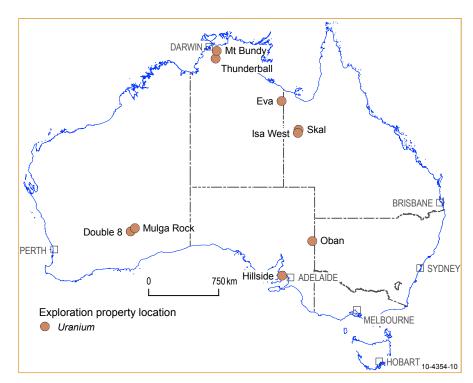


Figure 6: Selected uranium exploration projects 2009.

#### Queensland

At the Isa Uranium Joint Venture (Paladin Energy Ltd (50%), Summit Resources (Aust) Pty Ltd (50%)) which includes the Valhalla and Skal uranium deposits, a new resource estimate for **Skal** was completed. At Skal East, 300 m E of Skal North and South, drilling identified new uranium mineralisation where an Inferred Resource of 3.9 Mt @ 455ppm U<sub>3</sub>O<sub>8</sub> for 1779 t U<sub>3</sub>O<sub>8</sub> was announced. The total resource for all Skal deposits, at 250ppm U<sub>3</sub>O<sub>8</sub> cutoff, is Inferred Resources of 11.5 Mt @ 0.483g/t U<sub>2</sub>O<sub>9</sub> for 5560 t U<sub>2</sub>O<sub>9</sub>.

Deep Yellow Ltd continued exploration at its Isa North and Isa West projects. Drill intersections at Queens Gift included 27 m @ 569ppm U<sub>3</sub>O<sub>8</sub>, 51 m @ 422ppm  $U_3O_8$ , and 28 m @ 608ppm  $U_3O_8$ . The Bambino prospect returned 17 m @ 433ppm U<sub>3</sub>O<sub>8</sub>, 25 m @ 375ppm  $U_3O_8$ , and 10 m @ 477ppm  $U_3O_8$ . Intersections at the Thanksgiving prospect included 55 m @ 587ppm eU<sub>3</sub>O<sub>8</sub>, 3 m @ 2902ppm eU<sub>3</sub>O<sub>8</sub>, 7 m @ 682ppm eU<sub>3</sub>O<sub>8</sub> and 11 m @ 511ppm eU<sub>3</sub>O<sub>8</sub>. Eldorado North returned 6 m @ 2216ppm eU<sub>3</sub>O<sub>8</sub>, 7 m @ 1764ppm eU<sub>3</sub>O<sub>8</sub>, and 7m @ 1772ppm eU<sub>3</sub>O<sub>8</sub>.

#### South Australia

Curnamona Energy Ltd announced an initial Inferred Resource for the **Oban** deposit of an of 8.2 Mt @ 260ppm eU<sub>3</sub>O<sub>8</sub> for 2100 t of contained U<sub>3</sub>O<sub>8</sub>. The mineralisation is hosted by a horizontal lignitic, pyritic and carbonaceous lower sand member of the Eocene Eyre Formation at depths of between 80–90 m.

Rex Minerals Ltd announced that drilling at its **Hillside** Project on the Yorke Peninsula, identified the Parsee structure which returned high-grade uranium intersections. These included 5 m @ 0.8% Cu and 276ppm  $U_3O_8$  from 439 m; 18 m @ 297ppm  $U_3O_8$  from 509 m and 2 m @ 887ppm  $U_3O_8$ .

#### Western Australia

Uranio Ltd announced an initial Inferred Resource for the **Double 8** prospect some 180 km ENE of Kalgoorlie. The resource is 16 Mt @ 310ppm  $eU_3O_8$  for a contained 4960 t of uranium oxide at a cut off of 200ppm  $eU_3O_8$ .

Energy and Minerals Australia

Ltd announced an initial resource estimate for the **Mulga Rock** deposits. The Inferred Resource estimate is 24 520 t of  $U_3O_8$ . The work included the delineation of high grade uranium mineralisation at the Ambassador deposit of 7.63 Mt @ 960ppm  $U_3O_8$  for 7290 t of contained  $U_3O_8$ . High-grade mineralisation was also identified at both the Emperor and Shogun deposits.

#### **VANADIUM** (FIGURE 5)

#### **Northern Territory**

TNG Ltd announced an initial Inferred Resource for the **Mt Peake** Project, near Barrow Creek, of 107 Mt @  $0.32\% \, \text{V}_2\text{O}_5$  and  $5.9\% \, \text{TiO}_2$  at a  $0.1 \, \% \, \text{V}_2\text{O}_5$  cutoff. Later drilling has reportedly extended the area of mineralisation

#### Western Australia

Niplats Australia Ltd announced intersections from the Central, Buckman and Red Hill Prospects at **Speewah**. The Company reported a maiden vanadium resource for the Central deposit of Indicated plus Inferred Resources of 851 Mt @  $0.32\%\,V_2O_5$  with 334 Mt @  $0.32\%\,V_2O_5$  in the Indicated category. Included in this is a basal high-grade zone with Indicated plus Inferred Resources of 279 Mt @  $0.39\%\,V_2O_5$ . Intersections reported late in 2009 included 50 m @  $0.30\%\,V_2O_5$ , including 19 m @  $0.34\%\,V_2O_5$ , and 117 m @  $0.30\%\,V_2O_5$ , including 28 m @  $0.35\%\,V_2O_5$ .

Black Ridge Mining NL reported new drill intersections from the **Unaly** project, 30 km W of the Windimurra mine, including: 117 m at 34.56% Fe,  $0.66\% \, \text{V}_2\text{O}_5$ ,  $9.56\% \, \text{TiO}_5$ ; 26 m at 34.74% Fe,  $0.68\% \, \text{V}_2\text{O}_5$ , and  $9.67\% \, \text{TiO}_5$ ;

and 8 m @ 43.2% Fe,  $0.85\% V_2O_{5'}$  and  $12.75\% TiO_3$ .

## **DEVELOPMENT**

In year to the end of October 2009, the Australian Bureau of Agricultural and Resource Economics (ABARE) reported that 33 major mineral and energy projects were completed in Australia at a capital cost of \$9.1 billion. At the end of October 2009 ABARE reported that there were 74 projects at an advanced stage of investigation. A full review of developments is given in the ABARE report Minerals and Energy Major Development Projects – October 2009 listing which may be downloaded at www.abare.gov.au

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