

WESTERN AUSTRALIA

Exciting discoveries continue to be made in a huge State (2 500 000 km²)
80% is classified as greenfields

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EXPLORATION
INCENTIVE
SCHEME

Turner River: Results from drilling at **King Col** included 17 m at 2.55% Li₂O and a separate interval in the same hole of 1 m at 6.63% Cs₂O. (DeGrey Mining Ltd)

Pilgangoora: A revised measured and indicated resource now stands at 44 Mt at 1% Li₂O with 8.5 Mt measured. Reserves were also boosted to 34.2 Mt at 1.04% Li₂O (8.1 Mt proven). Project commissioning expected Q1 2018, with first sales expected by Q2 2018. (Altura Mining Limited)

Pilgangoora: Pilbara Minerals signed equity and offtake agreements with Chinese companies for up to 10 years of production. Construction at **Pilgangoora** commenced January 2017, targeting commissioning in mid-2018 (2 mtpa). A DFS for stage-2 is underway (4–5 mtpa). (Pilbara Minerals Ltd)

Wodgina: The world's largest known hard-rock lithium resource, estimated at 198 Mt at 1.18% Li₂O. Exports of ore (without on-site concentration) commenced April 2017. A 500 000 tpa, 6% spodumene processing plant is under construction, with completion in mid-2018. (Mineral Resources Ltd)

Carlow Castle: JORC-compliant resource estimates released for the **Carlow Castle** Co–Cu–Au project. The first estimate is for the smallest deposit, **Quod Est**, and is 557 000 t at 1 g/t Au, 0.2% Co and 0.5% Cu. Estimates for the larger deposits are expected in early 2018. Expansion of the **Radio Hill** plant is due for completion in June 2018. (Artemis Resources Ltd)

West Pilbara Gold (Purdy's Reward): Results for first bulk samples released. Bulk trench samples from the base of the conglomerate host horizon for the earlier reported gold nuggets were received, with grades of up to 177 g/t Au. Novo is considering options for assessing larger bulk samples from the project, which include constructing a pilot plant or using Artemis' **Radio Hill** plant. (Novo Resources Corp / Artemis Resources Ltd)

Battery Hub: Significant drilling results from the **Julia** prospect included 9 m at 14.85% Mn, including 2 m at 28.80% Mn; and 8 m at 14.66%, including 2 m at 30.13% Mn. (Pure Minerals Ltd)

Yangibana: Updated resource estimate released. Drilling results from **Simons Find**, **Auer**, and **Auer North** give an updated project resource of 21.0 Mt at 1.17% TREO (total rare earth oxides) including 0.40% Nd₂O₃+Pr₂O₃. Drilling results from **Simons Find** include a high-grade niobium intersection of 5.45 m at 5.30% Nb₂O₅. (Hastings Technology Metals Ltd / Cadence Minerals Plc)

Malinda: Drilling allowed definition of three prospects with significant lithium and minor tantalite intersections. Results include 23 m at 1.02% Li₂O at **T-Bone**, 13 m at 1.01% Li₂O at **Tomahawk**, and 8 m at 1.04% Li₂O at **Blade**. XRD analyses indicate that the pegmatite host rocks contain spodumene, lepidolite and holmquistite. (Arrow Minerals Ltd)

Gabanintha Gold: Recent drill results from the maiden drilling program at **Tumblegum South** include 3 m at 23.80 g/t Au and 0.32% Cu; and 2 m at 1.73 g/t Au and 1.67% Cu. The mineralization is hosted by quartz–carbonate veining within the 'Gabanintha' shear zone. (Bryah Resources Ltd)

Gabanintha: An updated resource estimate released with resources increased substantially to 179.6 Mt at 0.75% V₂O₅, including a measured resource of 10.2 Mt at 1.06% V₂O₅, and high-grade zone of 92.8 Mt at 0.96% V₂O₅ in the basal zone of the orebody. (Australian Vanadium Ltd)

Gabanintha: A maiden resource estimate of 21.5 Mt at 0.9% V₂O₅ and 10.1% TiO₂ for **Gabanintha South** has been released and includes a high-grade zone of 10.4 Mt at 1.1% V₂O₅ and 12.6% TiO₂ within a zone of massive magnetite. **Gabanintha** also includes **Gabanintha North**, which hosts an inferred resource of 62.8 Mt at 0.8% V₂O₅ and 9.7% TiO₂. (Technology Metals Ltd)

Dalgaranga: Construction nearing completion, with first gold production scheduled for Q2 2018. De-watering of the **Golden Wings**, **Sly Fox** and **Gilbeys** pits is underway and processing plant commissioning is due for completion in May 2018. The total resource currently is estimated at 31.1 Mt at 1.3 g/t Au for 1.32 million ounces. (Gascoyne Resources Ltd)

Deflector: Follow-up drilling at **Da Vinci**, the newly discovered northern extension of **Deflector**, extended the area of known high-grade mineralization. Intersections include 11 m at 56.3 g/t Au and 0.9% Cu. (Doray Minerals Ltd)

Watheroo Potash: Recent drilling results included intercepts of up to 24 m at 8.0% K₂O. Mapping showed extensive outcrop and subcrop of potassium feldspar-rich volcanoclastic and siliclastic rocks. Analysis of surface rock chip samples returned grades of up to 10.9% K₂O. (Shenton Resources Ltd)

Cataby: Iluka confirm development of the **Cataby** mine with a predicted 8.5-year mine life based on an 80 Mt ore reserve and a forecasted annual production of 200 000 t of synthetic rutile, 50 000 t of zircon and 30 000 t of rutile. The project will extend the operation of Iluka's **Capel Synthetic Rutile Kiln 2** for at least 9 more years. Iluka has also secured offtake agreements for 85% of synthetic rutile production for a minimum of four years. First production expected June 2019. (Iluka Resources Ltd)

Boonanarring: Total ore reserves estimated at 19.9 Mt at 7.2% total heavy minerals containing 22.7% zircon, 2.4% rutile, 1.8% leucoxene and 50.4% ilmenite. (Image Resources Ltd)

Kwinana Nickel Refinery: BHP Billiton's resurgent nickel division will build the world's biggest nickel sulfate plant at Kwinana. The plant is part of a broader plan to reposition the business around the burgeoning lithium-ion battery market. BHP states that demand from the battery market could account for about 90% of BHP's nickel output within five to six years. Stage 1 of the plant development will begin production in April 2019. (BHP Billiton Nickel West Pty Ltd)

Greenbushes: Tianqi Lithium Australia has committed to a A\$300 M expansion of its **Kwinana lithium hydroxide plant**. The plant will be the largest and first fully-automated plant in the world, and produce the highest quality LiOH. Stage 1 expected to be completed by end 2018 and Stage 2 by end 2019. (Tianqi Lithium Australia Pty Ltd)

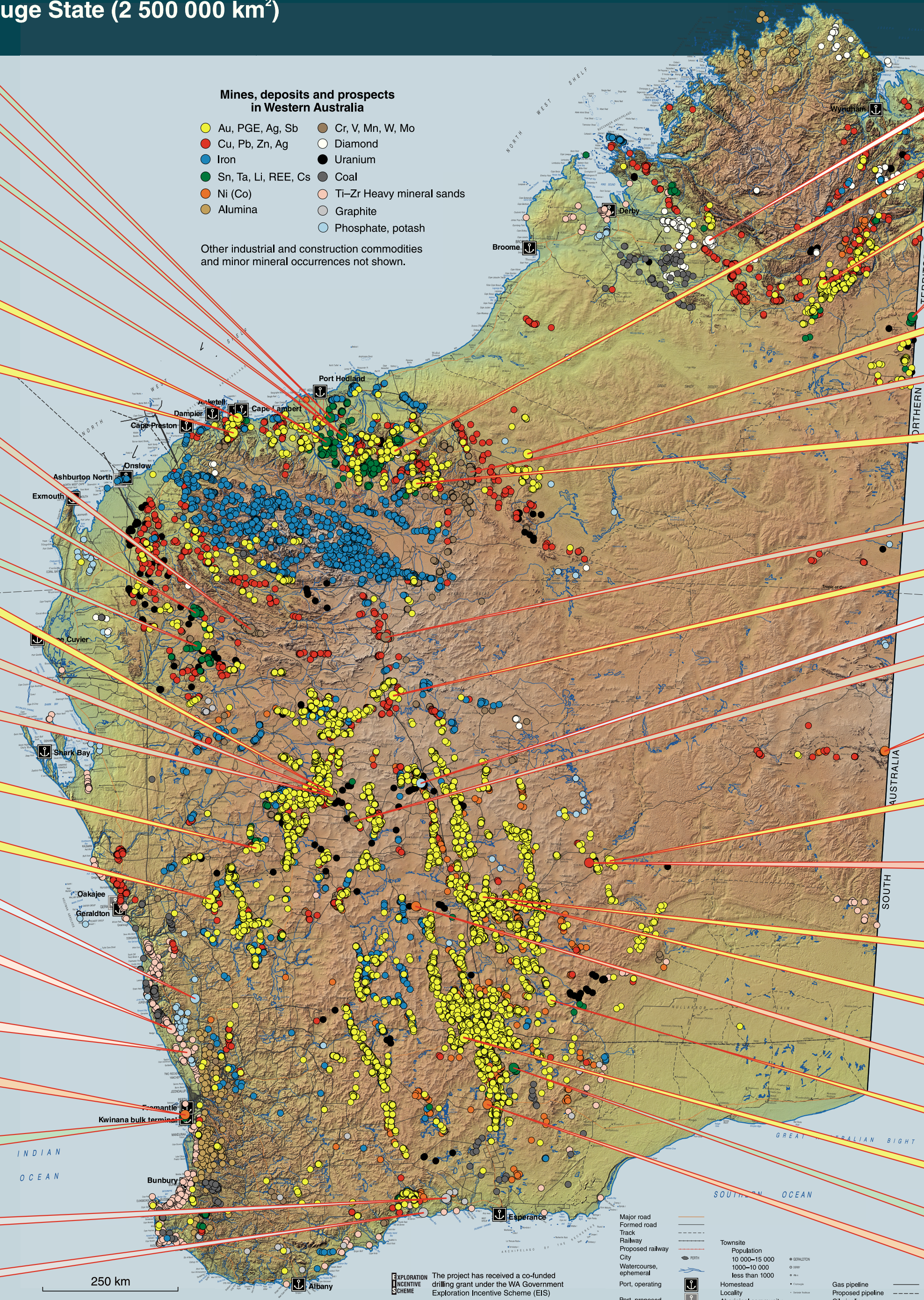
Munglinup: Potentially Western Australia's first modern graphite operation, a decision on whether to mine the 3.63 Mt at 15.3% graphite resource is expected this year for possible production in 2019. Annual production from five deposits could produce 56 000 t of graphite concentrate for nine years. (Mineral Commodities Ltd / Gold Terrace Pty Ltd)

Springdale: A new mineralized zone was identified 1 km east of **Springdale Main**. Results include 11 m at 25.6% total graphitic carbon (TGC) including 9 m at 30.2% TGC. Lower-grade horizons were also reported above this zone, with results including 4.6 m at 15.8% TGC. (Comet Resources Ltd)

Mines, deposits and prospects in Western Australia

- | | |
|---------------------|---------------------------|
| Au, PGE, Ag, Sb | Cr, V, Mn, W, Mo |
| Cu, Pb, Zn, Ag | Diamond |
| Iron | Uranium |
| Sn, Ta, Li, REE, Cs | Coal |
| Ni (Co) | Ti–Zr Heavy mineral sands |
| Alumina | Graphite |
| | Phosphate, potash |

Other industrial and construction commodities and minor mineral occurrences not shown.



Brooking: A near-surface diamondiferous lamproite was discovered at **Little Spring Creek**. 119 diamonds, including 7 macro-diamonds up to 1.0 mm recovered during microdiamond analysis of 86.8 kg of core sample. (Lucapa Diamond Company Ltd, Leopold Diamond Company Pty Ltd)

Warrawoona: Resource estimate increased by 74% to 10.5 Mt at 2.11 g/t Au (712 000 ounces). Drilling results included 25 m at 3.4 g/t Au at **Klondyke**, 6 m at 7.74 g/t Au at **Copenhagen**, and 10 m at 9.7 g/t Au at **Fieldings Gully**. (Calidus Resources Ltd)

Halls Creek – Lamboo Gold: Drilling confirmed the **Wagtail** deposit (previously openpit) will be the next underground development for the project. Drilling results included 4.15 m at 18 g/t Au. (Pantoro Ltd)

Browns Range: A 200 000 t trial mining operation involved the **Wolverine** and **Gambit West** openpits. Trial mining provided sufficient ore for a three-year pilot plant operation to produce mixed rare earth carbonate. On-site construction of the pilot plant has begun using imported modules. The project aims to become the first significant dysprosium (Dy, essential for NdFeB permanent magnets) producer outside of China, mining a resource totalling 8.98 Mt at 0.63% TREO. (Northern Minerals Ltd)

North Telfer: A maiden mineral resource announced for **Minyari–WACA** containing 11 Mt at 2 g/t Au (723 000 oz), 0.24% Cu (26 000 t), and 380 ppm Co (4000 t). (Antipa Minerals Ltd)

Woodie Woodie: Mining at the **Woodie Woodie** corridor resumed May 2017 with treatment of stockpiled ore following acquisition of the Consmin Group by China Tian Yuan Manganese Ltd, a subsidiary of Ningxia Tianyuan Manganese Industry Company Ltd. Openpit mining resumed September 2017. (Consolidated Minerals Pty Ltd)

Nullagine: The first underground mine development is underway. Mining to commence on the **Bartons** resource (97 900 oz) by March 2018. Drilling at **Bartons** underground returned high-grade results including 10.5 m at 38.64 g/t Au (including 5 m at 79.96 g/t Au and visible gold in core). A new zone of mineralization discovered at **Redbeard** within the **Yates** trend with results including 8 m at 8.44 g/t Au. (Millennium Minerals Ltd)

Butcherbird: Resource upgraded to 180 Mt at 10.8% Mn, including a maiden indicated resource of 22.4 Mt at 12.0% Mn for **Yanneri Ridge**. Hydrometallurgical test work was successfully completed, with leach solution concentrations (>90% Mn) exceeding industry specifications for the production of high-purity electrolytic manganese metal/dioxide. (Montezuma Mining Company Ltd)

Neds Creek: Intersections for the newly-identified **Gidgee Flat** prospect include 20 m at 2.4 g/t Au. (Lodestar Minerals Ltd)

Lake Way: Reconnaissance surface sampling of brine at **Lake Way**, returned sulfate of potash (SOP) values averaging 6859 mg/L K (potassium), equivalent to 15.25 kg/m³ SOP. (Salt Lake Potash Ltd)

Barrambie: Pilot-scale beneficiation test work is nearing completion. Testing aims to produce concentrates for the 'Neomet Process' Pilot Plant. Significant drilling results were also reported for **Virginia Hills**, including 19 m at 16.4% TiO₂ and 0.41% V₂O₅, and 19 m at 17.7% TiO₂ and 0.42% V₂O₅. (Neometals Ltd)

Wingellina: High-grade Co zones have been defined within the **Wingellina** Ni–Co deposit (with a total resource of 182.6 Mt at 0.92% Ni and 0.07% Co) with 15 high-grade cobalt pits delineated. The **Central Musgrave** project (including Wingellina) is one of the largest undeveloped Ni–Co deposits in the world, with project resources containing about 2 Mt of Ni and 154 000 t of Co. (Metals X Ltd)

Yamarna–Gruyere: Exploration drilling results include 8.5 m at 15.38 g/t Au at **Montagne**, and 5 m at 12.52 g/t Au from **North Yamarna – Gilmour Morello**. Construction of the **Gruyere** mine is advancing, with first gold pour scheduled for end Q1 2019. **Gruyere** has a total resource of 148 Mt at 1.3 g/t Au for 6.16 Moz. (Gold Road Resources Ltd / Gold Fields Ltd)

Mt Venn (Yamarna): Discovery of significant Cu–Ni–Co mineralization — drillhole 17MVDD001 intersected 33.0 m at 0.5% Cu, 0.1% Ni and 0.05% Co from 76.0 m downhole. Multiple parallel mineralized lenses intersected; infill drilling and metallurgical testwork commencing, with the aim of producing a copper concentrate plus leaching of pyrrhotite to produce nickel–cobalt sulfate. (Great Boulder Resources Ltd)

Leonora: Following completion of a definitive feasibility study, Kin announced that the company would develop its **Leonora** gold project. Plant commissioning and first production is planned for second half of 2018. Total mineral resources for the project, which includes **Mertondale** (11.6 Mt at 1.40 g/t Au for 521 000 oz Au), **Cardinia** (6.91 Mt at 1.33 g/t Au for 296 000 oz Au), and **Raeside** (3.82 Mt at 1.68 g/t Au for 206 000 oz Au) are 22.3 Mt at 1.43 g/t Au for 1.02 Moz of Au. (Kin Mining NL)

Mt Morgans: Underground mining ahead of schedule at **Westralia** and mining has commenced at the **Jupiter** openpit. Construction of the 2.5 Mt pa CIL treatment plant nearing completion. The project has a projected 8-year mine life and 1.2 million ounce reserve. The first gold pour is scheduled for March 2018. (Dacian Gold Ltd)

Mt Alexander: Drilling results from **Stricklands** 110 km southwest of **Leinster** include 17.45 m at 3.01% Ni, 1.31% Cu, 0.13% Co and 1.68 g/t PGE. Results from massive sulfide intervals include 5.3 m at 4.39% Ni, 1.45% Cu, 0.21% Co and 2.09 g/t PGE. (St George Mining Ltd / Western Areas Ltd)

Rebecca: Drilling at the gneiss-hosted **Bombora** deposit extended known mineralization 150 m southward. Intercepts include 17.84 m grading 15.95 g/t Au from 142 m (including 1 m at 231.27 g/t Au), and 49 m at 4.57 g/t Au. (Apollo Consolidated Ltd)

Coolgardie Gold: On track to begin mining in Q1 2018. The 65 000 ounce mining and toll treating operation will process ore at Westgold Resources' **Jubilee** mill. (Primary Gold Ltd)

Bald Hill: Resource estimate increased to 18.9 Mt at 1.18% Li₂O (covering 25% of the southern pegmatite swarm). Mining is underway and the first Li concentrate production from **Bald Hill** is on track for mid-2018. (Tawana Resources Ltd / Alliance Mineral Assets Ltd)

Mt Thirsty: Scoping study released for the **Mt Thirsty** Co–Ni deposit. Up to 27 000 t of Co and 35 000 t of Ni could be produced over a 21-year mine life. The current resource estimate is 31.94 Mt at 0.13% Co, 0.55% Ni and 0.86% Mn. (Barra Resources Ltd / Conico Ltd)



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