Overview of mineral and petroleum exploration and production in 2018

Ian Scrimgeour
NT mineral exploration expenditure since 2000
Annual exploration calculated quarterly

- 2011 - $228.4M
- 2016 - $78.1M
- 2018 - $123.2M
- 2003 - $41.5M
Greenfields exploration in the NT has doubled since 2014

Brownfields exploration has rebounded since mid-2017

Proportion of exploration classified greenfields by ABS is well above Australian average
Mineral exploration expenditure by commodity reported to DPIR in 2018

- Gold: 29%
- Base metals: 44%
- Other: 8%
- Lithium: 11%
- Uranium: 4%
- Rare earths: 1%
- Phosphate: 1%

Mineral exploration expenditure by region reported to DPIR in 2018

- Aileron: 24%
- McArthur: 32%
- Pine Creek: 19%
- Tennant: 3%
- Georgina: 2%
- Musgrave: 2%
- Pedirka: 4%

Tangible on-ground expenditure only (excludes overheads, desktop and feasibility studies)
Gold (Pine Creek)

Kirkland Lake Gold - Cosmo
- Underground development and exploration at Lantern
- High grade gold intersected at depth at Union Reefs (1.1m @ 95.0 g/t Au)

Bacchus Resources – Woolwonga
Substantial drilling during 2018

Primary Gold – Mount Bundey
Acquisition by Hanking Australia Pty Ltd

PNX Metals –
Fountain Head: Banner – 6m @ 39.5 g/t Au; Tally Ho – 6.67m @ 11.35 g/t Au

Vista Gold – Mount Todd
DFS well advanced, environmental assessment process complete
Gold (Tanami)

Newmont Tanami Operations:
• Pre-mining endowment now 14.2 Moz, 4.1 Moz resources added from 2012-2017
• 439 km gas pipeline from Amadeus pipeline to Dead Bullock Soak completed

Northern Star Resources:
• Substantial footprint in the Tanami
• Aircore and RC drilling at numerous prospects in CTP and 100% owned tenure in 2018
• High-grade intersections at Hurricane-Repulse (3m @ 20.47 g/t Au, 19m @ 4.64 g/t Au) and Jims (26m @ 3.88 g/t Au)

Newcrest Mining: Major new entrant into Tanami in 2018, through Euro JV with Prodigy Gold and 100% tenure

Prodigy Gold:
• Aggressive greenfields exploration at Capstan and Galaxy
• Upgraded resource for Suplejack
Gold-copper (Tennant Ck)

- High-grade cobalt confirmed at Jasper Hills in Northern Corridor
  19m @ 0.47% Co, 11.4% Cu, 0.56 g/t Au
- Emmerson-Evolution JV restructured in early 2018:
  - Evolution taking 100% ownership of copper-rich Gecko mine corridor
  - Emmerson regained 100% of remainder
- Strategic alliance between Emmerson and Territory Resources:
  - JV and farm-in over ERM’s Southern Leases, plus Nobles Nob and Juno
  - Central Processing Facility at Warrego
- Territory Resources purchased Edna Beryl mine to recommence mining
- High grade gold-copper results from Emmerson at Mauretania and The Susan
  Mauretania: 22m @ 36 g/t Au incl. 6m @ 122 g/t Au;
  26m @ 2.06% Cu, 0.11% Co
  The Susan: 11m @ 48 g/t Au
Todd River Resources – Mount Hardy
New zinc-rich discovery at EM1
35.54m @ 14.7% Zn, 2.92% Pb and 0.91% Cu and 59 g/t Ag, incl:
11.29m @ 22.9% Zn, 3.35% Pb, 1.00% Cu, 58g/t Ag

KGL Resources – Jervois
25.8 Mt @ 1.49% Cu, 27.1 g/t Ag
Commencement of construction targeted for late 2019

Further high-grade resource growth at Reward Deeps and Rockface
• Reward Deeps: 4.52 m @ 5.73% Cu, 109.20 g/t Ag and 1.21 g/t Au
• Rockface: 6.16m @ 7.84% Cu, 37.7 g/t Ag, 0.66 g/t Au

Independence Group/Prodigy Gold – Lake Mackay
Regional SPECTREM surveys and soil sampling across large
greenfields area
9600m of RC drilling planned in first half of 2019
McArthur Basin base metals and cobalt

Northern Cobalt - Wollorang project
- Sediment hosted siegenite in McArthur Basin
- **Stanton**: 942,000t @ 0.13% Co, 0.06% Ni, 0.12% Cu
- **Running Creek**: 55m @ 0.78% Cu incl. 13m @ 2.01% Cu
- Newly identified copper mineralisation at GregJo

Drilling programs by Pacifico Minerals (Lorella), Todd River Resources (McArthur), Marindi Metals/JOGMEC (Carinbirini), MMG (incl. Cow Lagoon)

Teck Resources: Teena
58 Mt at 11.1% Zn, 1.6% Pb
Lithium

Core Exploration – **Finniss project**
Combined resource: **8.85 Mt @ 1.3% Li₂O**

- Four resources now defined (Grants, BP33, Carlton, Sandras)
- Discovery and resource growth continuing at multiple prospects
- Grants resource passing through development approvals – investment decision planned for 2019
Uranium

Vimy Resources Ltd

- **King River** and **Wellington Range** projects acquired from Cameco in March 2018 (JV - Rio Tinto 25%)
- **Angularli** maiden resource: **0.91Mt @ 1.3% U₃O₈** for 26Mlbs U₃O₈; best drill intercept of 22.9m @ 4.63% U₃O₈ from 244.6m
- Scoping study released on Angularli development
- RC drill program in 2018 at Angulari and Such Wow

Eclipse Metals – identification of paleochannels through detailed gravity in Ngalia Basin
Other minerals

**Tungsten** – Updated DFS for Molyhil, acquisition of share of Bonya JV

**Rare earths** – Arafura to place final rare earths processing on site at Nolans

**Phosphate** – Verdant Minerals subject to takeover; Avenira produce super-phosphoric acid using IHP

**Manganese** – new EL granted on Winchelsea Island

Environmental assessment process complete for **Tellus** (Chandler salt), **TNG** (Mount Peake vanadium-titanium-iron) and **Arafura** (Nolans rare earths) and **Verdant** (Ammaroo P)
Petroleum – Amadeus Basin

Central Petroleum
• 23% increase in gas production to 6.15 billion cubic feet in 2018
• Production restarted at Palm Valley gas field
• Two appraisal wells drilled – West Mereenie 26 and Palm Valley 13
• Increase in gas reserves announced for 3 producing fields
• 154% increase in oil reserves announced at Mereenie

Santos (-Central)
• 1335 km of seismic completed in 2016-2018
• Drilling of Dukkas gas-helium prospect in 2019

From Menpes et al, AGES 2018
Origin Energy (2018) identified multiple stacked potential plays

Velkerri Shale dry gas

Velkerri Shale liquids rich gas

Kyalla Shale & hybrid lithology liquids rich gas

Hayfield Sandstone oil/condensate

https://doi.org/10.1071/AJ17040

Petroleum – Beetaloo Sub-basin

Exploration scheduled to recommence in 2019 with drilling planned by Origin and Santos
Resourcing the Territory initiative

4 year (2018-2022), $26 million NT Government initiative to grow the exploration sector

Supporting industry innovation through grants for greenfields exploration
Upgrading the Territory's coverage of geophysical data
Unlocking the resource potential of the Barkly and Gulf regions.
Stimulating greenfields exploration in central Australia
Promoting the Territory's resource potential and investment opportunities; and
Making exploration and geoscience data more accessible
Investment Attraction

Dedicated program under Resourcing the Territory to assist companies attract investment or JV partners from international markets

Focus on east Asia and North America

- web-based multi-lingual promotion of opportunities on Resourcing the Territory website
- domestic events to global investors
- Ministerial-led delegations to China, Japan and South Korea
- Promotion at PDAC and NAPE

If you are interested, talk to us or email resources.investment@nt.gov.au
AGES 2019 Sponsors

- CORE Lithium
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