



# Astro advancing strong assets

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# Astro advancing strong assets

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## **Astro is advancing a select portfolio of diverse, high quality assets.**



We have strong news on three diverse, high quality assets in proven areas of Western Australia and Nevada.

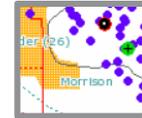


We have the management team in place to advance those assets.



We are applying capital to a responsible 3-year plan and have met our 2018 milestones.

# Promising news on a high-quality portfolio



Astro has promising news on three well-defined licences in diverse, proven resource-producing areas. The resulting portfolio reduces both exploration and commodity risk.



## **Governor Broome mineral sands (WA)**

Program underway to upgrade to Indicated Resource status.



## **Needles epithermal gold (Nevada)**

IP/Resistivity confirms sampling and identifies new caldera.



## **Kimberley diamonds (WA)**

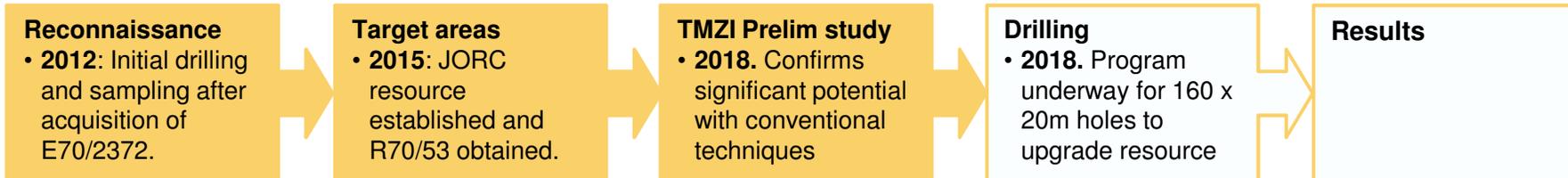
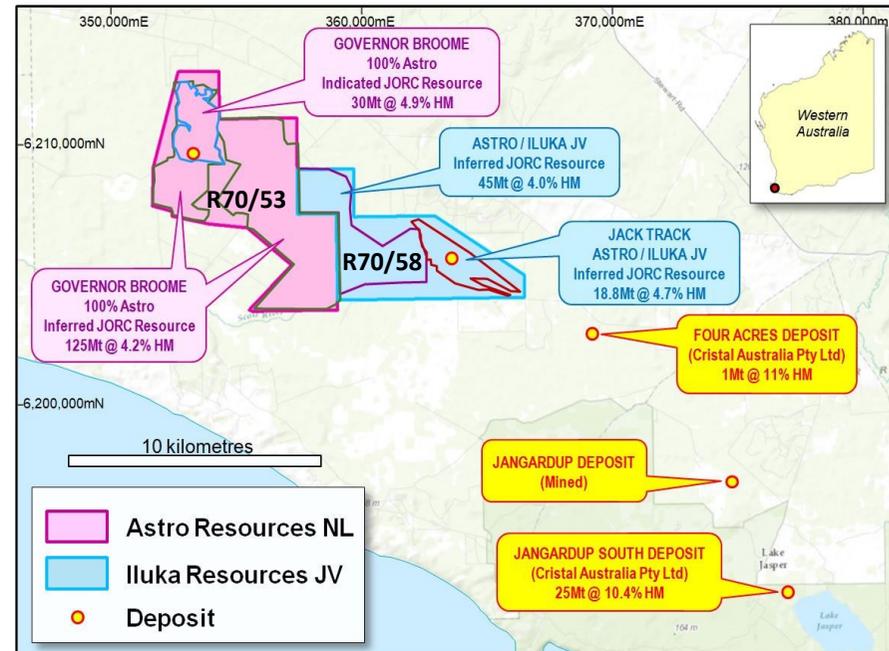
GPR confirms path for ground disturbing work

# Governor Broome overview



**Astro has two assets in the rich mineral sands corridor of WA's southwest corner: a JORC-compliant HM resource (R70/53) 100% owned by Astro, and a retention licence (R70/58) 20% owned in a JV with Iluka Resources.**

- **Location.** SW of West Australia, 90km south of Busselton, Scott Coastal Plain.
- **Asset.** R70/53 (100% owned) plus adjacent E70/58 (20% interest).
- **Highlights.**
  - Indicated resource 30Mt @ 4.9% HM
  - Inferred resource 125Mt @ 4.2% HM
  - Potential access to Iluka's Capel processing plants
- **Progress.**
  - TZMI confirms potential to generate significant positive cash flows with conventional techniques.
  - Planning and permitting underway for 160 x 20m holes to upgrade southeast portion of Inferred Resources to Indicated Resource status



# Governor Broome details



**TMZI scoping study confirms potential to generate significant positive cash flows with conventional techniques, and permitting underway for drilling program.**

**Target areas**  
 • 2015. JORC resource established and R70/53 obtained.

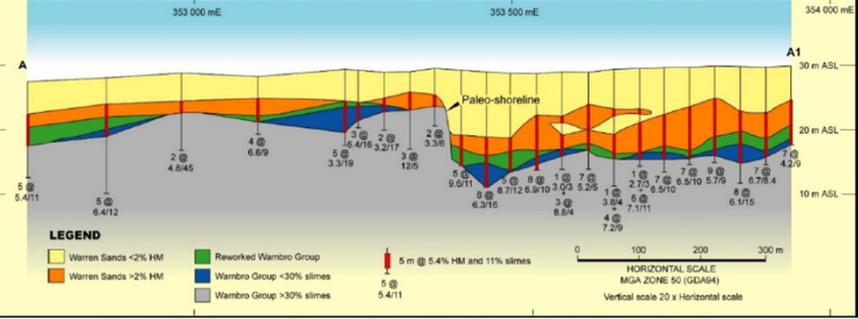
Resource summary at min 2% HM lower block-cut

	Mt	% HM	% Slimes	% Oversize
<b>Indicated</b>	30	4.9	12	8.1
<b>Inferred</b>	125	4.2	15	8.3
<b>Total</b>	<b>155</b>	<b>4.3</b>	<b>15</b>	<b>8.2</b>
Subset of Indicated Resource included in Scoping Study Mining Inventory				
	<b>22</b>	<b>4.8</b>	<b>10.9</b>	<b>8.8</b>

**TMZI Prelim study**  
 • 2018. Confirms significant potential with conventional techniques

- Indicated Resource of 22Mt at 4.8% HM.
- Primary ilmenite, secondary ilmenite and leucoxene, rutile, zircon, garnet
- Potential for simple, low cost operation using widely adopted conventional techniques
- Potential to generate strong positive cashflows based on current and long-term mineral sands price forecasts

Cross section at 6,209,640mN



JORC Report Number WA15/01 prepared by J.J.G. Doepel BSc (Hons), Principal Geologist, Continental Resource Management Pty Ltd

# Scoping study assumptions



**TMZI scoping study confirms potential for conventional mine with a life of 4 years**

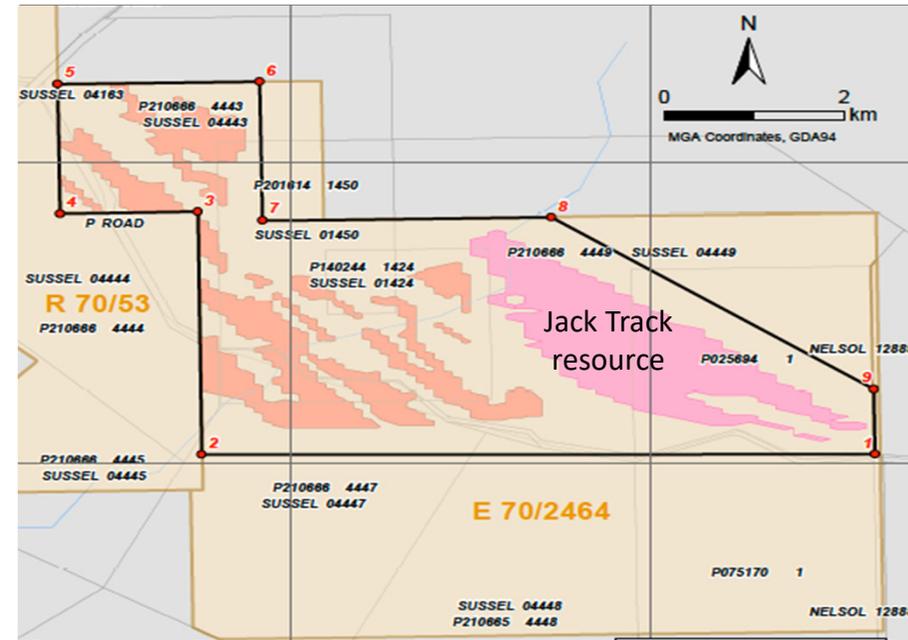
Parameter	Assumption	
Indicated Resource	22 Mt subset of the total Indicated Resource of 30 Mt averaging 4.9% HM.	
Mining Method	Conventional dry mining using a single front-end loader and Mobile Mining Unit combination which screens and slurries the ore before pumping to the primary concentrator plant.	
Mining Rate	5.5 Mtpa / Strip Ratio varying from 0.9:1 to 1.1:1	
Life of Mine	4 years (excluding any allowance that may be applicable to an Inferred Resources).	
Mine Design	Contiguous mining strips of about 200m width (up to 500m width) that would allow mining of relatively wide, shallow pits using conventional dry-mining methods.	
Mining dilution assumption	Nil (Loss and dilution factors are estimated at less than 5%. Given the relative uncertainties associated with preliminary study level estimates and the selective dry mining method assumed, ore loss and dilution were ignored for the preliminary study. In-pit grade control will be used during mining to minimise loss and dilution on the bottom and top surfaces of mineralisation.)	
Mining recovery assumption	100%, as above.	
Primary Concentrator Plant	<b>Unit</b>	<b>Value</b>
Rougher Spiral Feed Rate	tph (solids)	605
HM grade (% heavy mineral)	%	4.8 (3.9 - 5.6)
Incoming slimes content	%	11 (10 - 12)
Ilmenite recovery to HMC	%	92
Zircon recovery to HMC	%	95

# Jack Track overview



**JORC resource identified, for which Iluka has secured a retention licence.**

- **Location.** SW of West Australia, 70km south of Busselton, South River Coastal Plain.
- **Asset.** E70/58 "Jack Track" section (20% owned, Iluka 80%).
- **Highlights.**
  - Inferred JORC-compliant resource of 18.8Mt @ 4.7% HM with 890,000t HM at 3.0% cut-off grade.
  - Target area identified
- **Progress.** Retention licence R70/58 granted August 2018. Waiting for Iluka for potential to upgrade the resource category

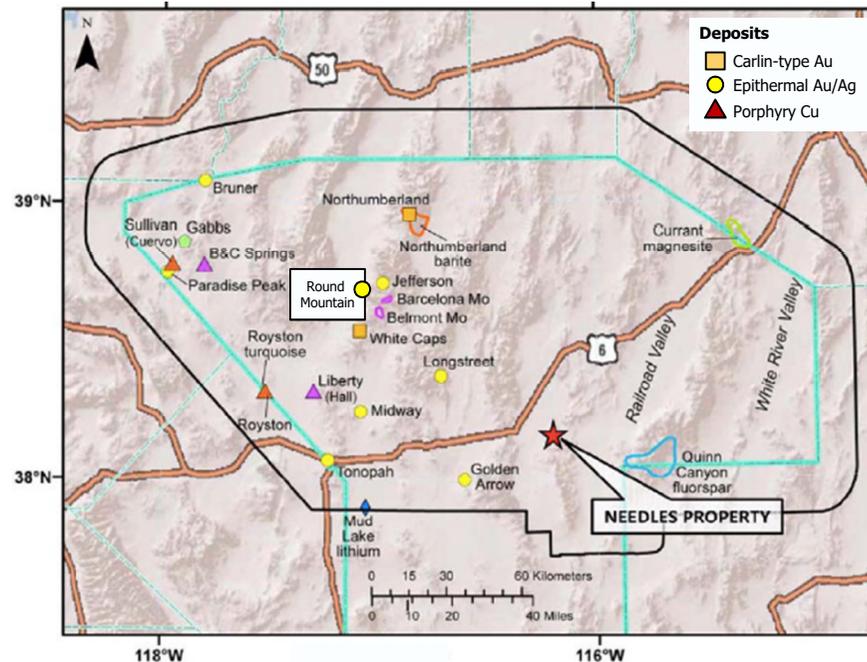


# Needles (Nevada) overview



**IP/Resistivity surveys confirm highly promising initial sampling and identify new caldera-style feature in historically notable area.**

- **Location.** Nye County, 330 km N of Las Vegas. An area of rich epithermal gold-silver deposits proven since 1900, with Round Mountain Mine producing Au 20m oz and Ag 11m oz.
- **Asset.** 113 unpatented mineral lode mining claims over 2,335 acres.
- **Highlights.** IP/resistivity survey confirms sampling and identifies large 2x1.6km caldera feature with affinity to other local deposits
- **Progress.** Planning and permitting underway for 19H1 drilling program.



# Nevada (Needles) detail

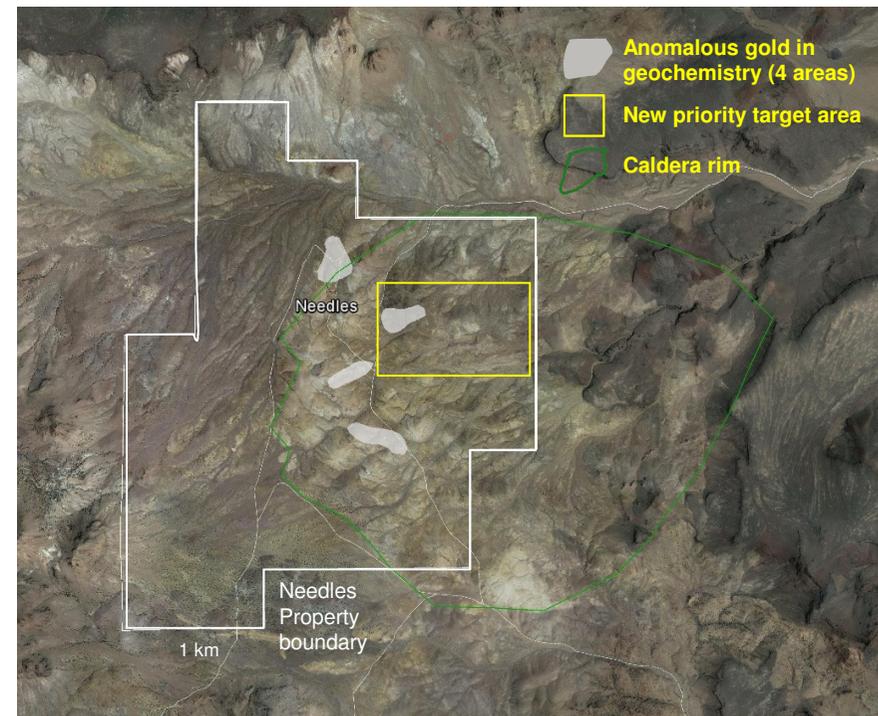


Exploration by Centric Minerals Management has identified strong prospects for target mineralisation of epithermal gold ( $\pm$  silver and base metals)

## Acquisition

- 4 Oct 17 purchase

- **Source.** Asset identified by Centric Minerals Management Pty Ltd
- **Geology.** Near eastern margin of a 15km wide eroded volcano/caldera complex, part of extensive continental magmatism, formed between  $\sim$ 32 and  $\sim$ 19 million years ago
- **Main deposit type.** Structurally controlled, silver-antimony-gold-bearing epithermal quartz veins. Silver and arsenic-bearing sulphides characterize areas of high-grade gold-silver mineralisation.
- **History.** Small-scale historical mining and exploration.
- **N143-101 report.** "a paleotectonic and stratigraphic setting that is highly conducive to the development of epithermal Au-Ag" ... "clearly analogous to that of Round Mountain Mine"



# Nevada (Needles) confirmation

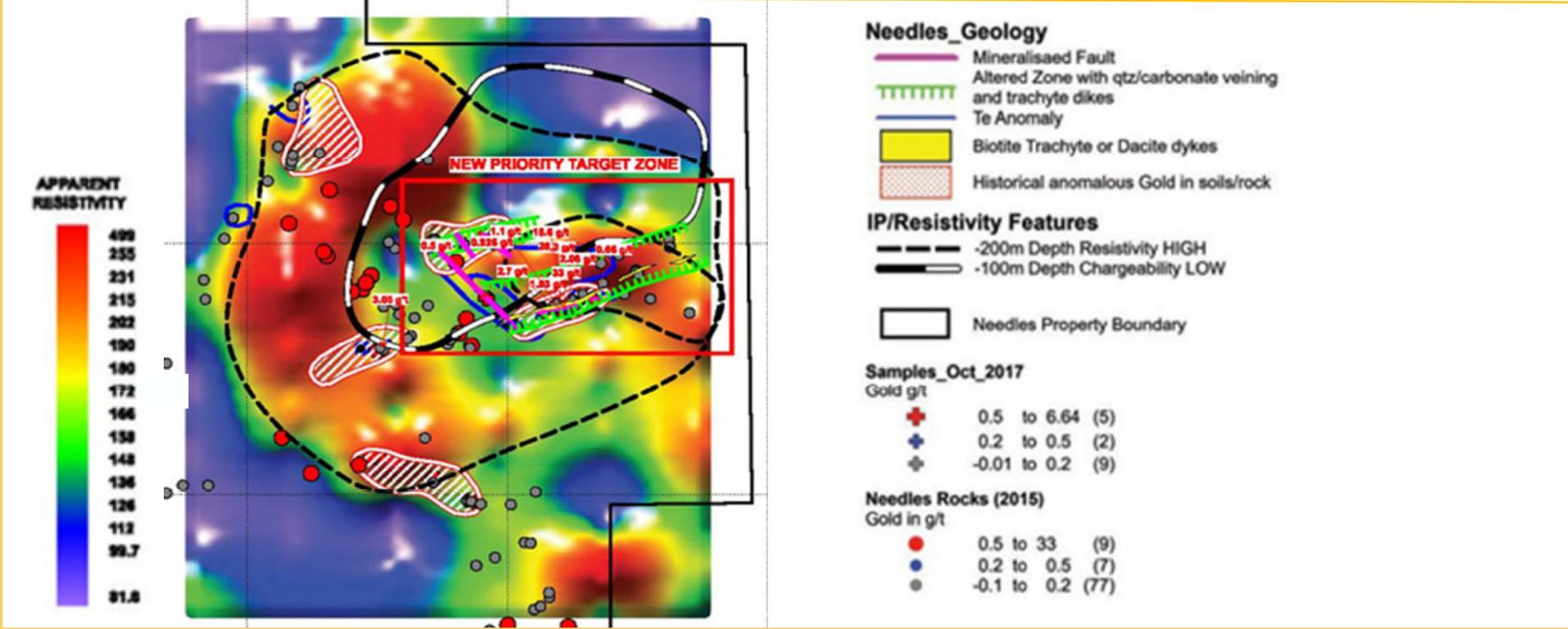


**Ground geophysics (IP/resistivity) survey conducted by Zonge International confirms gold/silver mineralised veins, alterations and dykes**

**IP/resistivity survey**  
 • 2018: confirms sampling and new prospect areas

• **Work:** 6 lines at 400m spacing using standard 9-electrode dipole-dipole array using a 0.125Hz, 50pc transmitted waveform

• **Results** at 100m, 200m and 300m below surface all support the low-sulphidation deposit model and coincide with the gold/silver mineralised veins, alteration and dykes, warranting more exploration.

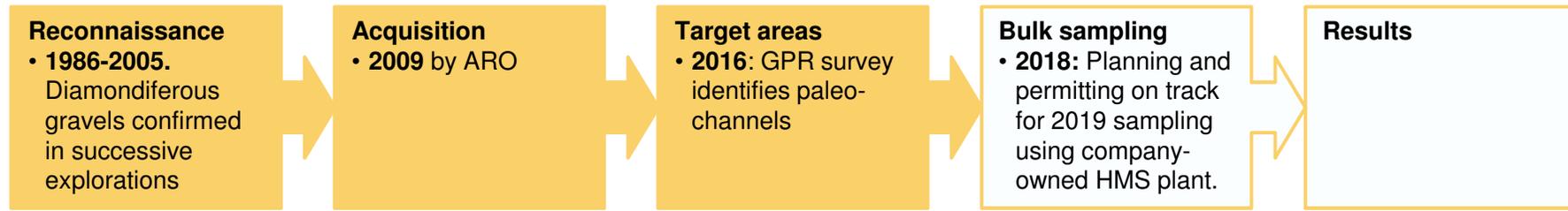
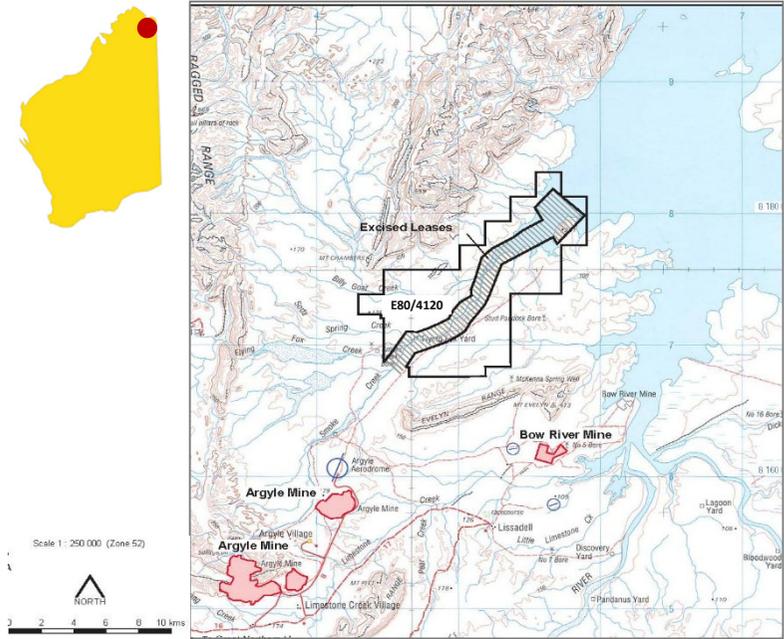


# Lower Smoke Creek overview



**Asset exceeding expectations, with large-scale earthworks required. Future sampling is planned on two promising paleo-channels that run towards the Argyle diamond mine.**

- **Location.** East Kimberley, WA, adjoining the Argyle and Bow River Diamond Mines.
- **Assets.** E80/4120 Lower Smoke Creek, together with Heavy Mineral Separation (HMS) plant on site.
- **Highlights.** Interpreted results reveal a 10m paleo-channel of 5 million m<sup>3</sup> gravel in a relatively deep bedrock sump represents a compelling target for future exploration.
- **Progress.** With asset exceeding expectations:
  - planning and permitting on track for bulk sampling in 2019Q1 using company’s HMS plant
  - Heritage planning with Miriuwong-Gaherrong people underway.
  - Upgraded HMS to be used in bulk sampling



# Lower Smoke Creek details



In the main target area, a gravel accumulation infilling a relatively deep bedrock sump, represents a compelling target for future exploration.

## Reconnaissance

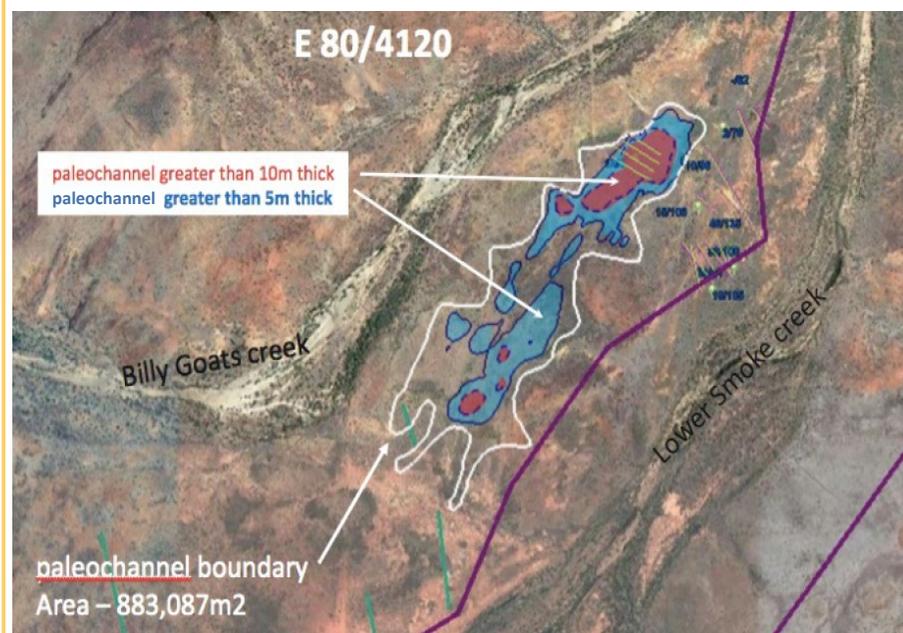
- **1986-2005.** Diamondiferous gravels confirmed in successive explorations

- Exploration included limited bulk sampling, airborne magnetics, geochemical soil sampling, and drilling

## Target areas

- **Oct 16.** GPR survey identifies paleo-channels.

- **Work:** 57-line km ground penetrating radar (GPR) survey together with 3D modelling of main alluvial trap sites
- **Result:** Two interpreted paleo-channels, extensions of known diamond areas running north-east from the Argyle mine, are targets for alluvial diamond deposits:



- main target: 10m thick channel, 5M m<sup>3</sup> gravel in deep bedrock sump, a compelling target for future exploration
- second target: 5m thick channel, diverted NW probably in response to a bedrock barrier
- **2018:** Planning and permitting with local NTO group continuing for large-scale ground-disturbing work in Q1 2019.

# Technical expertise



## Stephen Gemell

### Experience

- 40 years' mining experience in Africa, North and South America, Australasia, Asia and Europe, specialising in mineral property assessment.
- In past 3 years, Chairman of Argent Minerals Ltd, Eastern Iron Ltd and Hillgrove Mines Pty Ltd (the owner/operator of Hillgrove antimony-gold mine), non-executive director of Stonewall Resources Ltd
- B.E. (Mining) (Hons), Fellow of AusIMM, member of VALMIN Committee, Chairman of International Mineral Valuation Committee

### Track record

- Mine manager at Copeton, Wolfram Camp, Dreadnought
- Inaugural Managing Director, Matlock Mining NL
- Technical Director, Zimplats Ltd
- Adviser to Anvil Mining Ltd during development of 3 mines in DRC

## John Doepel

### Experience

- Director and Principal Geologist of Continental Resource Management Pty Ltd.
- Exploration Geologist with over 30 years' experience in a wide variety of metals and industrial minerals, including mineral sands.
- B.Sc (Hons), Grad Dip Forensic Science (UWA) Member of Geological Soc Aust and AusIMM

### Track record

- Discovery of Keysbrook Mineral Sands Deposit
- Discovery of Cornishman Double O Gold Deposit at Southern Cross
- Discovery of Paleochannel Garnet Deposit, Harts Range, N.T.
- Pre-mining up-grade of Deflector Gold-Copper Deposit, Murchison, W.A.
- Pre-mining up-grade of Mons Cupri and Whim Creek Oxide Copper Deposits, Pilbara, W.A.

# Technical expertise



## Greg Bromley

### Experience

- 40 years exploration and mining in Australia, Americas, Asia and Africa, multi-commodity grass roots to feasibility, for CRA Exploration, Normandy and Mindax Ltd.

### Track record

- Team member of CRA Exploration's initial diamond discovery in Leopold Downs area (1976)
- CRA sampling and geophysical programs in Canning Basin (Cummins Range Carbonatite), Officer Basin and Western NSW until 1983.
- Agbaou gold to prefeasibility (Cote d'Ivoire).
- Founded Mindax (MDX:AX), identified 2B tonne magnetite resource at Mt Forrest through to FS. Uranium resource at Mukinbudin WA.
- Technical Director Plateaux Resources developing deep resource at Penny West WA (gold).

## Centric Minerals Management, Consultants

### Corporate Experience

- Principals in the US and Australia have mining exploration experience in Americas, Asia and Australia
- US-based principal geologist has over 35 years' experience in epithermal gold-silver project assessment

### Track record

- Centric Minerals Management is currently managing four other drill-ready gold projects in Nevada and Arizona
- US principal has been involved in the discovery of gold and silver deposits in the western US that have lead to both new mines and mine expansions
- Principals in the US and Australia have deep experience in managing gold-silver projects from prospect identification through resource delineation and feasibility

# Management expertise



## Jacob Khouri

Non-executive Chairman

### Experience

- Director of Gun Capital Corporate, a strategic investor and advisory services company.
- Representative of the major shareholder, Mining Investments Ltd, a strategic investor in junior exploration companies.
- Successful value creation with various junior mining companies
- Former director of Medibio Limited and Esperance Minerals Limited.

## Vince Fayad

Executive Director, CFO, Company Secretary

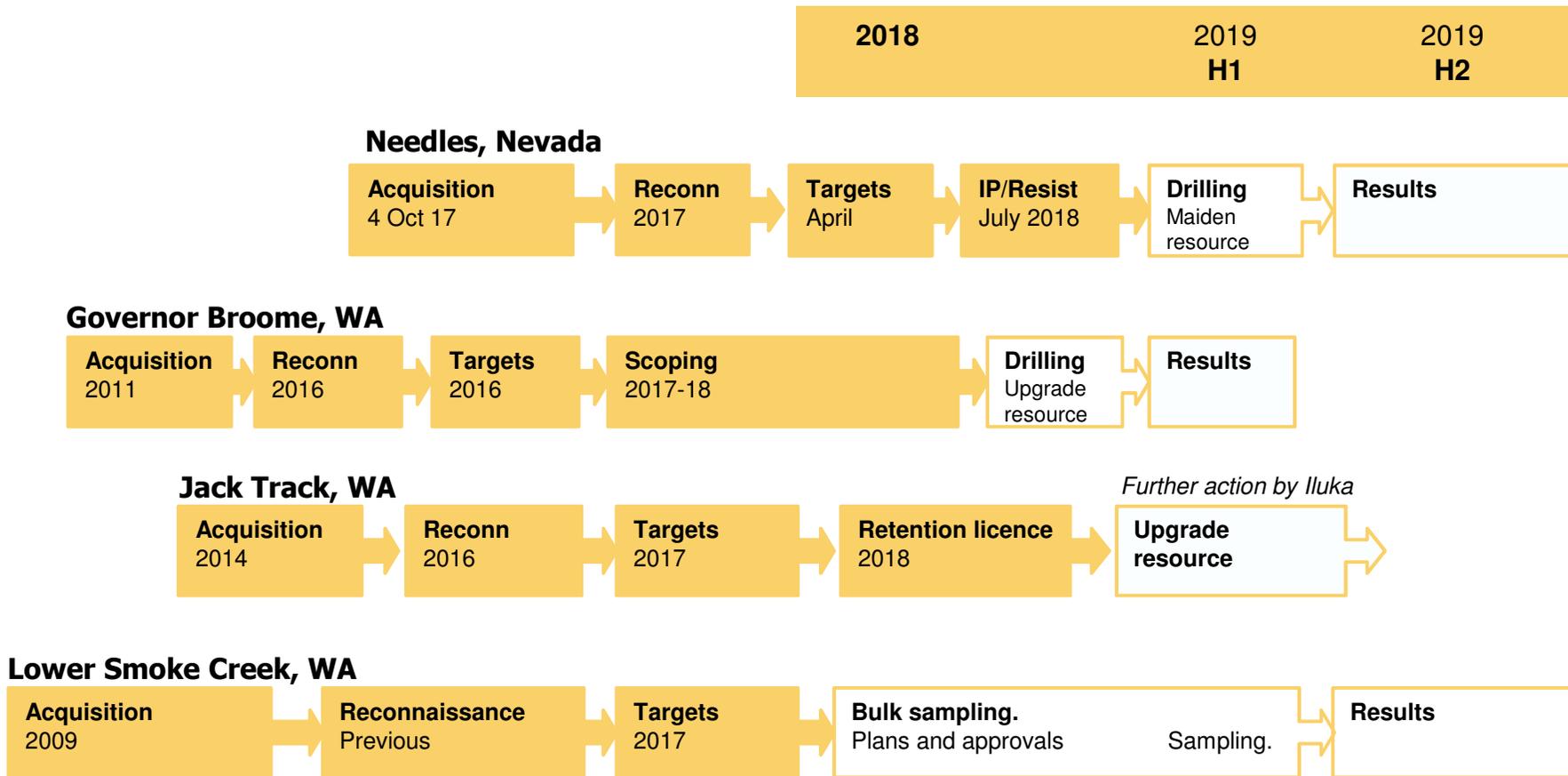
### Experience

- 35 years' experience in corporate finance, international M&A, accounting and other advisory related services in Sydney-based mid-tier accounting firms.
- As Executive Director of East Coast Minerals (ECM, now part of European Lithium Limited) responsible for capitalisation and progression of the lithium project to JORC resource.
- Public company experience includes Executive Director, Company Secretary and CFO of Greenvale Energy Limited (ASX: GRV), ED and Interim CFO of Ashley Services Group Limited (ASX:ASH), Chair of Medibio Limited (ASX: MEB) and NED of Esperance Minerals Limited (ASX: ESM).

# Development record and plan



**Astro remains active on its three primary properties, with major advances planned for 2019.**



# Past application of funds



**Astro has explored a number of tenements over 3 years at a cost of approximately \$X.Xm, and is now advancing its selected high quality assets.**

FUNDS RAISED	FY 2016	FY 2017	FY 2018
Advances received from associated parties	514	-	1,028
Proceeds from rights issue	-	3,090	11
Loans repaid/capitalised	-	(1,985)	(108)
(Decrease)/Increase in cash at bank	(66)	154	(2)
<b>Total</b>	<b>448</b>	<b>1,259</b>	<b>929</b>
FUNDS APPLIED	FY 2016	FY 2017	FY 2018
Operating Expenditure	472	434	395
Abnormal expenditure**	258	166	-
Acquisition of Needles tenement	-	-	399
Exploration Costs	166	148	272
Interest Expense	64	-	73
(Decrease)/Increase in trade and other creditors	(417)	524	(231)
Depreciation of property, plant and equipment	(14)	(13)	(12)
(Decrease) in other asset	(81)	-	33
<b>Total</b>	<b>448</b>	<b>1259</b>	<b>929</b>

\*\* Abnormal costs include transaction costs for the aborted technology transaction, convertible debt facilities and prior years stamp duty on the initial 80% acquisition of the Governor Broome Sands tenement.

# Funding for the next phase



**To advance its selected properties, Astro currently has \$684,000 in available funds from continued support from its largest shareholder.**

Available funds at 30 Sept 2018	\$'000
Cash on hand	11
Gun Capital Management P/L– Loan Facility *	673
Initial facility	1800
Drawdown as at 31/12/2017	(1127)
<b>Currently available funds</b>	<b>684</b>
* Gun Capital Management P/L loan is \$1.127m (incl capitalised interest) unsecured at 12 to 15% p.a. repayable end October 2019	

Shares issued at 31 Dec 2017	
Fully paid ordinary shares (price \$0.003 at 5 November 2018)	
<b>Total ordinary shares on issue</b>	<b>885,927,320</b>
Shares over which options granted	Nil
Partly paid ordinary shares issued	Nil
<b>Fully diluted number of shares on issue</b>	<b>885,927,320</b>

Substantial shareholders	Share of fully paid capital
Mining Investments Ltd	34.0%
SEK Investments Pty Ltd	9.97%
Carkaho Holdings Pty Ltd	5.25%

# Further information

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## Contact

Vince Fayad, Company Secretary, [admin@aro.com.au](mailto:admin@aro.com.au) or [vince.fayad@vfassociates.com.au](mailto:vince.fayad@vfassociates.com.au)

## ASX Announcements

See [aro.com.au](http://aro.com.au) or [ASX listing](#)

- 18 Jan 2018 Quarterly activities and cashflow report
- 18 Dec 2017 Update on Needles Exploration Project
- 17 Oct 2017 Quarterly activities and cashflow report
- 10 Oct 2017 Completion of Needles acquisition and board changes
- 13 Sep 2017 2017 Annual Report
- 04 Sep 2017 Market update

# Competent Persons

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The information in this report that relates to the Needles Property is based on information compiled by Charles Straw, a Director of Centric Minerals Management. Mr Straw who is a member of the Australian Institute of Mining and Metallurgy has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person under the 2012 Edition of the 'Australasian Code for reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Straw consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information in this presentation as it relates to Mineral Resources and Exploration Targets for the Governor Broome Deposit (excluding that of the Iluka JV is based on information compiled by John Doepel (Director of Continental Resource Management Pty Ltd (CRM), who is a member of the Australasian Institute of Mining and Metallurgy). Mr Doepel has sufficient experience in mineral resource estimation, which is relevant to the style of mineralisation and type of deposit under consideration and are qualified as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Doepel consents to the inclusion in the report of the information in the form and context in which it appears.

The information in this report as it relates to Iluka JV is based on information compiled by Shaun Seah under the review of Brett Gibson who is a member of The Australasian Institute of Geoscientists and a full time employee of Iluka. Brett Gibson has sufficient experience which is relevant to this style of mineralisation to qualify as a Competent Person as defined in the 2012 Edition of the JORC Code and consents to the inclusion in the report of the matters based on information in the form and context in which it appears.

The information in this report as it relates to Exploration Results for the East Kimberley diamond deposits is based on information compiled by Greg Bromley who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Bromley has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and are qualified as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Bromley consents to the inclusion in the report of the information in the form and context in which it appears.