ACTIVITY REPORT

For the period ending 30 September 2018

WESTERN AREAS LTD

Solid start to FY19, all guidance metrics on track and Odysseus DFS decision

September Quarter 2018 Highlights:

- **One lost time injury, resulting in a LTIFR of 1.81**
- **Mine production of 5,868 nickel tonnes**
- **Mill production 5,379 nickel tonnes with 89% recovery**
- **Unit cash cost of nickel in concentrate of A$2.99/lb, well within guidance range**
- **Operating cash flow of A$24.8m and closing cash at bank of A$150.9m**
- **Capital expenditure, early works at Odysseus, feasibility study costs and exploration total A$25.4m**
- **Mill Recovery Enhancement Project (MREP) in ramp up mode with new bagging facilities installed and operational**
- **Substantial progress on Odysseus definitive feasibility study (DFS) with a decision to mine and DFS results announced post quarter end**

Western Areas Managing Director, Mr Dan Lougher, said the September quarter was about commencing the new financial year with a strong start and focussing on delivery of the Odysseus DFS.

"The DFS for Odysseus, our next planned mining and processing operation, was completed and approved post the end of the quarter."

"The September quarter outcomes were in line with our expectations and pleasingly nickel in concentrate production was the highest it has been in the last nine months."

Western Areas ("WSA" or the "Company") (ASX: WSA) is pleased to report an excellent start to the year, with operations on track and significant development activity comprising early works at Cosmos, new primary ventilation fans installed and commissioned at Spotted Quoll and the new filtration and bagging facilities at the MREP completed on time and budget.

Mine grades at both Spotted Quoll and Flying Fox were ahead of plan and reserve for the quarter which resulted in less material movements to produce 5,868 nickel tonnes in ore. Cosmic Boy concentrator throughput was in line with plan and, with 89% recovery, delivered its highest quarterly concentrate production in nine months at 5,379 nickel tonnes.

A key focus for the quarter was completion of the Odysseus DFS at Cosmos, which was released post quarter end. The study highlights a long mine life, low cash operating cost and low sustaining capital expenditure operation. Using nickel prices currently lower than consensus forecasts the projected economic outcomes are excellent, but also importantly demonstrate that the Project is well funded from existing cash reserves for a number of years. There are also significant upside opportunities for the Company to investigate, including a mining optimisation study of the adjacent AM5 and AM6 deposits which contain 57.6kt of nickel classified in the Indicated Mineral Resource category.

The MREP has commenced its ramp-up mode from commissioning and is continuing to produce in line with specification. A number of small samples were sent to potential customers in early October, and a container with 20t of product was prepared as a bulk trial for export.

The nickel price remains volatile, with geo-political factors putting further downward pressure on the market during the quarter, despite nickel fundamentals being strong for stainless steel and future battery demand growth. LME nickel stockpiles have fallen to around 220kt, down over 40kt from the prior quarter, demonstrating that demand continues to outstrip supply. Post quarter end, Western Areas attended the 2018 LME Conference where these views were reinforced by all commentators and analysts. LME week was also an excellent opportunity to meet existing and potential new customers for nickel concentrate with our current contracts having just over 12 months to run.

Production Overview

Item	Unit	2017/2018			2018/2019
		Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Total Ore Mined	tonnes	143,476	163,479	160,714	141,567
Mine Grade	Ni %	4.2%	3.8%	4.0%	4.1%
Total Nickel Mined	**tonnes**	**5,970**	**6,236**	**6,381**	**5,868**
Ore Processed (Milling/Concentrator)	tonnes	161,218	148,083	152,425	156,706
Processed Grade	Ni %	4.0%	3.9%	4.0%	3.9%
Average Processing Recovery	%	86%	86%	89%	89%
Total Nickel in Concentrate	**tonnes**	**5,527**	**4,827**	**5,368**	**5,379**
Total Nickel Sold	**tonnes**	**5,275**	**4,750**	**5,176**	**5,018**
Contained Nickel in Stockpiles	tonnes	3,717	4,311	4,755	4,820
Cash Cost Nickel in Concentrate	**A$/lb**	**2.50**	**2.71**	**2.80**	**2.99**
Cash Cost Nickel in Concentrate	US$/lb	1.92	2.13	2.12	2.19
Exchange Rate	US$/A$	0.77	0.79	0.76	0.73
Net Nickel Price (before payability applied)	**A$/lb**	**7.22**	**7.80**	**8.71**	**7.91**

Western Areas has Australia's highest grade nickel mines and is a low unit cash cost producer. Its main asset, the 100% owned Forrestania Nickel Project, is located 400km east of Perth in Western Australia. Western Areas is also Australia's second largest sulphide nickel miner producing approximately 22,000 to 25,000 nickel tonnes in ore per annum from its Flying Fox and Spotted Quoll mines - two of the lowest cost and highest grade nickel operations in the world.

An active nickel developer at Cosmos and explorer Western Gawler in Australia, the Company also holds exploration interests in Canada through shareholdings in Grid Metals (formerly Mustang Minerals). Additionally, the Company has exposure to the emerging lithium market via its shareholding in Kidman Resources Limited.

The Board remains focused on the core business of low cost, long life nickel production, new nickel discoveries and generating returns to shareholders. It has put in place the cost structure and capabilities to prosper throughout the cycle by adopting prudent capital management and an opportunistic approach. Its latest presentation can be found at **http://www.westernareas.com.au/investor-centre/corporate-presentations.html**.

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Corporate and financing

Cashflow

Operational cashflow for the quarter was A$24.8m with a lower average (pre-payable deduction) nickel price for the quarter of A$7.91/lb (June quarter A$8.71/lb) and sales volumes lower than expected due to weather delays impacting deliveries. The Company expects sales volumes to more closely match, or exceed production volumes next quarter as seasonal weather conditions pass.

In line with plan, capital and mine development expenditure of A$15.8m (June quarter A$11.6m) was significantly higher this quarter, with the ventilation system for Spotted Quoll being completed. Cosmos expenditure totalled A$4.4m which included early works at Odysseus of A$3.0m, with the balance being for the DFS. In line with guidance, exploration expenditure ramped up to A$5.2m.

Cash at bank at quarter end was A$150.9m (June quarter A$151.6m), while cash at bank plus nickel sales receivables totalled A$164.3m (June quarter A$172.0m).

Hedging

When pricing is supportive, the Company manages nickel price and foreign exchange risk with a combination of short term quotation period (QP) hedging and a set limit of medium term hedging. The policy allows the use of forward sales, bought options and collar style options:

- QP hedging is used to manage the risk of price fluctuations for nickel already shipped to offtake partners, where the nickel price is yet to be finalised; and
- Medium-term hedging is used to manage the risk of nickel price fluctuations, with a maximum 25% of expected nickel sales per month hedged out for a period of 12 to 18 months.

Details of hedging in place at quarter end are as follows:

Hedging Details - FY 2019				
Nickel Hedging - Collar Options			**US$ Hedging - Collar Options**	
Ni Tonnes Hedged	1,200		US$ Hedged	22,500,000
Average Floor	US$13,250/ tonne		Average Put	US$0.7617
Average Cap	US$15,881/ tonne		Average Call	US$0.7050

Kidman Resources Limited (Kidman)

The Company owns 17.4m shares in Kidman with a market value of A$18.5m, based on a closing share price of $1.06.

Guidance

The Company released FY19 Guidance during August and to date all metrics are well within guidance. However, with the release of the Odysseus DFS and the Board's decision to mine, growth capital expenditure associated with FY19 will now increase A$12m to reflect the upgraded work program.

Category	Original FY 19 Guidance	Updated FY19 Guidance
Nickel tonnes in Concentrate Production	20,500 to 22,000	No Change
Unit Cash Cost of Production (Nickel in Concentrate)	A$2.80/lb to A$3.20/lb	No Change
Sustaining and Mine Development Capital Expenditure	A$32.0m to A$36.0m	No Change
Expansion Projects & Feasibility	A$5.0m to A$8.0m	A$17.0m to A$20.0m
Odysseus Early Works	A$24.0m to A$28.0m	No Change
Exploration	A$12.0m to A$15.0m	No Change

Mine safety and environment

Safety

A Lost Time Injury (LTI) occurred in September when a contractor tripped over a hose in the concentrator workshop and sustained a fractured knee cap. The LTIFR now stands at 1.81 and Total Recordable Injury Frequency Rate at 9.94.

Emergency response training focused on firefighting, closed circuit breathing apparatus, and hazardous materials. Two closed circuit breathing apparatus courses were conducted during the quarter, resulting in an additional fourteen BG4 capable team members.

Fire extinguisher training commenced during the quarter with 115 personnel trained and will continue into October to cover the remaining workforce.

Firefighter training

Environment

Forrestania (FNO)

A minor environmental incident occurred during the quarter where a containment cap failure on a legacy buried pipeline resulted in the discharge of, pH-neutral, water over a relatively small and contained footprint north of the Cosmic Boy tailings storage facility. No surface drainage lines or wetlands were impacted by the spill and a vegetation monitoring program was implemented in line with best practice.

The annual rehabilitation planting program was completed in July with 39,000 seedlings planted on the Spotted Quoll waste rock dump and two gravel pits, rehabilitating approximately 3.5 hectares.

A number of key compliance reports were also completed including the FNO Annual Environment Report, the annual Mineral Resources Fund submission, the National Pollutant Inventory submission and the Conservation Management Plan to support an exploration programme in the Jilbadji Nature Reserve.

Cosmos

No reportable environmental incidents were recorded during the quarter.

The Department of Mines, Industry, Resources and Safety granted approval of the Mining Proposal for the Orleans open-pit dewatering pipeline. Sixteen (16) new water monitoring bores and seepage recovery bores were installed during the quarter around WMP8 and 9.

The Company commenced the rehabilitation of completed exploration drill holes with the assistance of Tjiwarl Aboriginal Corporation representatives during the quarter.

Tjiwarl Aboriginal Corporation representatives, Peter George and Daniel Beaman inspecting a rehabilitated drill-hole.

Mine and mill production statistics and cash costs

TONNES MINED		2017/2018			2018/2019
		Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Flying Fox					
Ore Mined	tonnes	65,681	66,858	67,236	58,699
Grade	Ni%	3.7%	3.7%	3.9%	4.0%
Flying Fox Nickel Mined	**tonnes**	**2,453**	**2,466**	**2,625**	**2,330**
Spotted Quoll					
Ore Mined	tonnes	77,795	96,621	93,478	82,868
Grade	Ni%	4.5%	3.9%	4.0%	4.3%
Spotted Quoll Nickel Mined	**tonnes**	**3,517**	**3,770**	**3,756**	**3,538**
Total Ore Mined	**tonnes**	**143,476**	**163,479**	**160,714**	**141,567**
Grade	**Ni%**	**4.2%**	**3.8%**	**4.0%**	**4.1%**
Total Nickel Mined	**tonnes**	**5,970**	**6,236**	**6,381**	**5,868**

Flying Fox

Mine Production

Production was **58,699 tonnes of ore at an average grade of 4.0% nickel for 2,330 nickel tonnes**. Ore production was predominately (92%) derived from long-hole stoping (LHS) with 8% from ore drive development.

LHS production was sourced solely from the T5 area, namely from the 455, 425 (1.7kt @ 4.8% Ni), 410 (1.3kt @ 5.3% Ni), 385 (8.7kt @ 4.2% Ni), 345 (3.4kt @ 5.7% Ni), 295 stopes and 215 (3.6kt @ 4.5% Ni).

Associated paste-filling of stope voids resulted in 21,420m^3 of paste poured.

Mine Development

Twin-boom jumbo development recommenced in September with 140m of twin capital incline development to access the orebody extension below the previous Outokumpu workings. This involved 72m at the 1170 level (primary vent and second means of egress) and 68m at the 1150 level (main haulage), which will open up a new mining district in the upper parts of the mine.

The lower parts of the mine completed 259m of single-boom jumbo development which involved:

- 69m of lateral capital development at the 345 access and 160 access;
- 50m of operating waste development at the 180 and 160 levels;
- 63m in paste-fill (between the 455 and 215 levels) to facilitate slot drilling; and
- 80m of ore drive development at the 200, 180 and 160 levels supplemented by wall stripping at the 345 level.

There was also 13m of vertical raise-bore development to facilitate the 200 to 180 levels safe-scape ladder-way installation.

200 NOD escape-way cuddy at a face grade of 9.2% Ni

The new H663i Sandvik 63t truck

Spotted Quoll

Mine Production

Spotted Quoll production was **82,868 tonnes of ore at an average grade of 4.3% nickel for 3,538 nickel tonnes**. Ore production was sourced predominately from LHS (63%) with the remainder (37%) from ore drive development.

The 'twin-boom area' (TBA) continued production from the 1215, 932 levels and commenced stoping of the 627 level.

The 'single-boom area' (SBA) completed the 871, 837 and 833 levels, with ongoing production from the 862, 852 842, 832 and 804 levels, and commencement of the 920, 825 and 819 levels mid-quarter.

Mine Development

Total jumbo development for the quarter was 1,352m, which included 213m of capital decline development. During the quarter, 400m of lateral capital development and 259m of operating waste development occurred, which included 86m of paste-fill development to facilitate slot drilling.

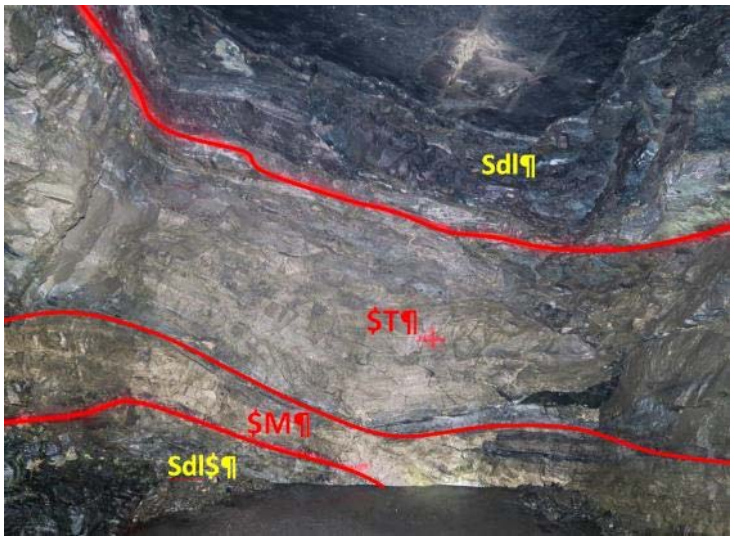
The 'Stage 2' 580 and 565 ore drive levels were established from the 570 level off the main decline, with 231m ore drive development completed between 610 and 595 levels by quarter end.

A total of 250m of SBA ore drive development past the ore reserve boundary was completed between the 767 and 747 levels (13.1kt at 3.6% Ni).

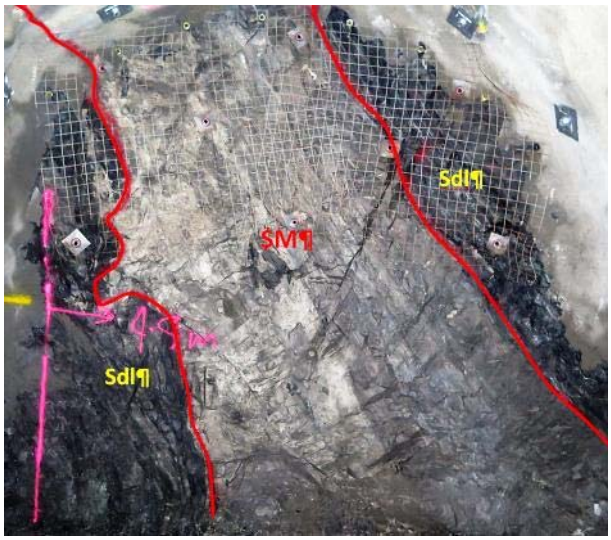
Infrastructure

Commissioning of the surface twin primary fans was completed late in the quarter which increased the total mine primary exhaust airflow from the inaugural 180m^3/s to 250m^3/s using variable motors. This upgrade is a major step forward for the mine and involved decommissioning of the redundant underground four primary ventilation 90kW axial fans.

The 756 primary underground magazine was also commissioned, which replaced the 1280 magazine that was decommissioned prior to the ventilation upgrade.



757 ore drive (3.5mW x 3.5mH) @ 6.0% Ni



595 ore drive (4.5mW x 4.5mH) @ 9.0% Ni

Cosmic Boy Nickel Concentrator

TONNES MILLED AND SOLD		2017/2018			2018/2019
		Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Ore Processed – Mined Ore	tonnes	136,816	144,925	**152,425**	**156,706**
Ore Sorter & Low Grade Stockpile	tonnes	24,402	3,158	0	-
Total Ore Milled	**tonnes**	**161,218**	**148,083**	**152,425**	**156,706**
Grade	%	4.0%	3.9%	4.0%	3.9%
Ave. Recovery	%	86%	86%	89%	89%
Nickel in Concentrate Produced	**tonnes**	**5,527**	**4,827**	**5,368**	**5,379**
Nickel in Concentrate Sold	**tonnes**	**5,275**	**4,750**	**5,176**	**5,018**

The Cosmic Boy Concentrator processed 156,706 tonnes of ore at an average grade of 3.9% nickel for a total of 35,445 tonnes of concentrate grading 15.1% nickel. This resulted in 5,379 nickel tonnes produced at a metallurgical recovery of 89% with average concentrator availability of 97%.

During the quarter a 40-hour planned maintenance shutdown was required to conduct routine maintenance on a flotation cell and associated process pumps.

A total of 34,090 tonnes of concentrate was delivered for sale containing 5,018 nickel tonnes. Nickel sales were lower than production due to inclement weather halting some deliveries to BHPB Nickel West.

Other sales unit costs during the quarter were royalties at A$0.25/lb and transportation of A$0.38/lb in concentrate.

Stockpiles

Ore stockpiles at the end of the quarter totalled **118,548 tonnes of ore at 3.5% nickel for 4,133 nickel tonnes** representing more than two months of mill feed, thereby enabling the selection of an optimal mill feed blend.

The concentrate stockpile at quarter end was 4,462 tonnes at an average grade of 15.4% nickel, containing 687 nickel tonnes. This included 84 containers at Esperance ready for the October shipment.

Laboratory Technician Veasna Kelmar, conducting assay analysis

STOCKPILES		2017/2018			2018/2019
		Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Ore	tonnes	108,950	127,504	135,793	118,548
Grade	%	3.1%	3.1%	3.2%	3.5%
Concentrate	tonnes	1,829	2,426	2,972	4,462
Grade	%	15.7%	14.7%	15.1%	15.4%
Contained Nickel in Stockpiles	**tonnes**	**3,717**	**4,311**	**4,755**	**4,820**

Cash Costs

FINANCIAL STATISTICS		2017/2018			2018/2019
		Dec Qtr	Mar Qtr	Jun Qtr	Sep Qtr
Group Production Cost/lb					
Mining Cost (*)	A$/lb	1.81	1.89	2.03	2.24
Haulage	A$/lb	0.07	0.07	0.07	0.07
Milling	A$/lb	0.47	0.57	0.52	0.49
Admin	A$/lb	0.18	0.21	0.21	0.22
By Product Credits	A$/lb	(0.03)	(0.03)	(0.03)	(0.03)
Cash Cost Ni in Con (***)	**A$/lb**	**2.50**	**2.71**	**2.80**	**2.99**
Cash Cost Ni in Con (***)	**US$/lb(**)**	**1.92**	**2.13**	**2.12**	**2.19**
Exchange Rate US$ / A$		**0.77**	**0.79**	**0.76**	**0.73**

(i) Includes MREP Nickel tonnes produced.

(*) Mining Costs are net of deferred waste costs and inventory stockpile movements.

(**) US$ FX for Relevant Quarter is RBA average daily rate (Sep Qtr = A$1:US$0.73)

(***) Payable terms are not disclosed due to confidentiality conditions of the offtake agreements. Cash costs exclude royalties and concentrate logistics costs.

Note: Grade and recovery estimates are subject to change until the final assay data are received.

The unit cash cost of production of nickel in concentrate (excluding smelting/refining charges, concentrate logistics and royalties) was A$2.99/lb (US$2.19/lb), which is well within the full year guidance range of A$2.80/lb to A$3.20/lb. The quarter on quarter increase in mining cost per pound is consistent with the commentary provided with the FY18 Results and FY19 Guidance Announcement released on 22 August 2018, and reflects rise and fall charges on the mining contract, more development ore and general cost inflation.

Forrestania Mineral Resources and Ore Reserves

A full summary of the Company's Mineral Resource and Ore Reserve estimates is included at the end of this report.

Flying Fox

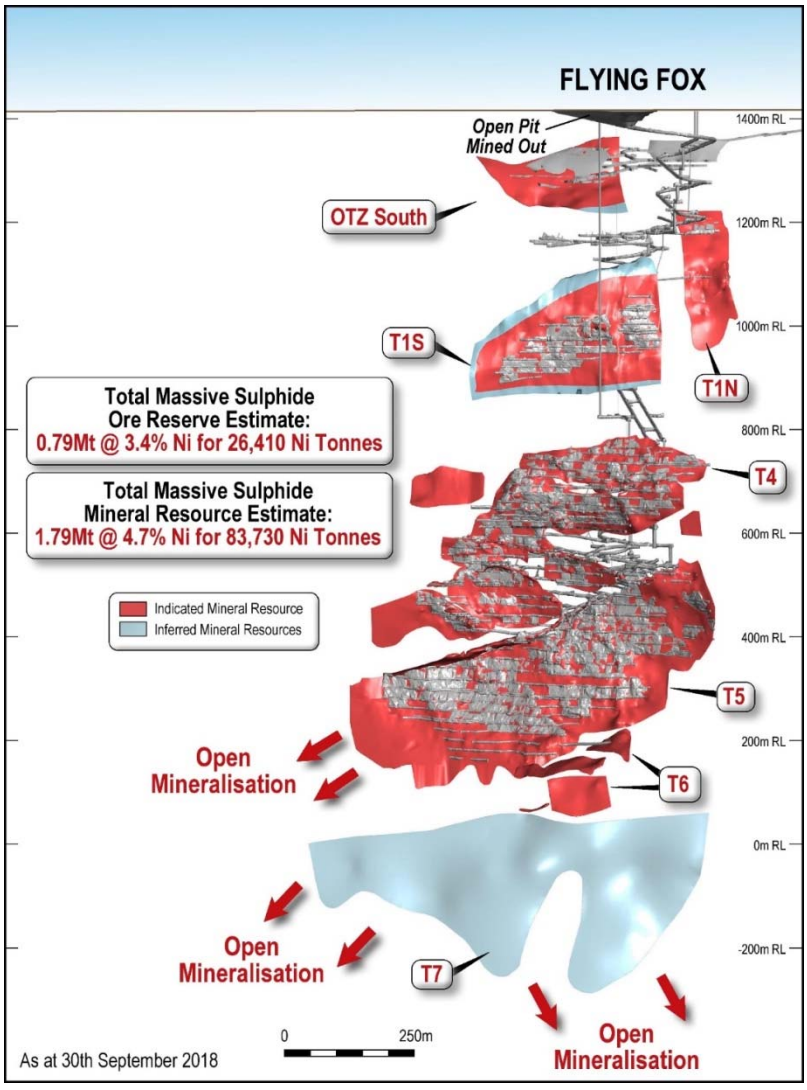
The Mineral Resource has been updated following grade control and resource definition drilling, particularly in the lower levels of T5 and the top of T6. This resulted in a minor net decrease in the modelled ore thickness when compared to the previous Mineral Resource estimate. Consequently, this has resulted in a loss of 430 nickel tonnes from the depleted Ore Reserve published in the June quarter. The reduction seen in the Ore Reserve grade is a result of mining these narrower areas of the orebody.

A technical and economic review has commenced to assess the lower grade areas of Flying Fox which includes the hangingwall disseminated zone associated with the T5 and Lounge Lizard orebodies. This review will assess the suitability of the lower grade ores to heap leaching utilising the Company's Bioheap technology and has the potential to extend the operating life of Flying Fox. As per the Company's Ore Reserve and Mineral Resource Statement there is an Indicated Mineral Resource in these disseminated zones of 4.6Mt at a grade of 0.8% Ni for 36,590 nickel tonnes.

The Flying Fox **Massive Sulphide Mineral Resource,** including depletion to the end of September 2018, stands at **1.79Mt of ore at a grade of 4.7% Ni for 83,730 nickel tonnes**.

The Flying Fox **Massive Sulphide Ore Reserve,** including depletion to the end of September 2018, stands at **0.79Mt of ore at a grade of 3.4% Ni for 26,410 nickel tonnes.**

A summary of the drilling activity below the Ore Reserve is summarised in the Exploration section.



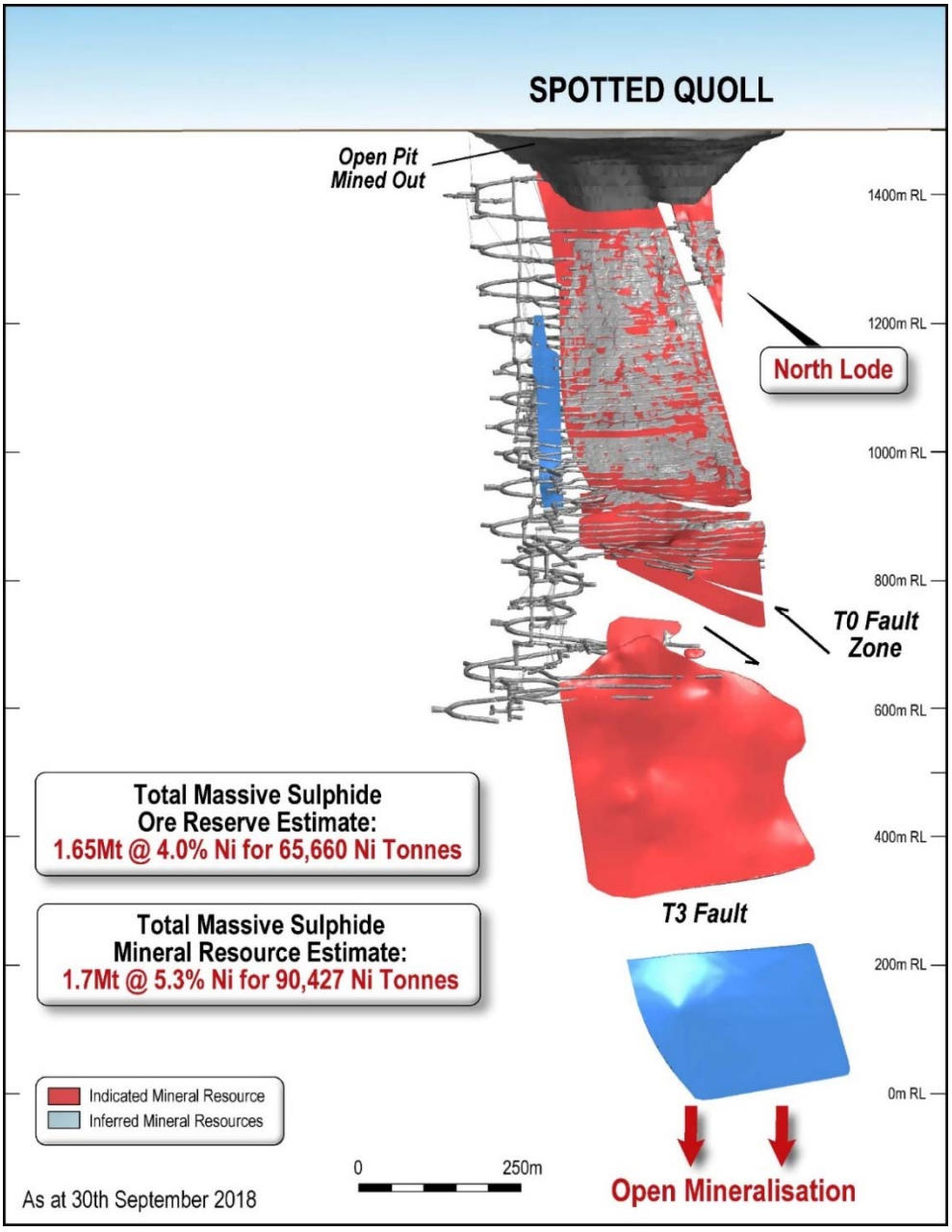
Spotted Quoll

The Mineral Resource was updated following extensive grade control and resource definition drilling focussing mainly in the top area of Stage 2. In addition, remnant pillars (higher up in the mine) were removed from the resource model as they were deemed uneconomic and there was a reduction of ore tonnes from the Inferred Resource category (peripheral to the flat zone). The net result of all changes resulted in a reduction (after depletion) in Ore Reserves of 2,732 nickel tonnes in the September quarter from the June quarter.

A surface diamond drilling program designed to test Stage 3 (below the T3 fault) mineralisation commenced in mid-September. The program involves a staged approach with an initial parent drill-hole (1,288m) followed by a number of wedged drill-holes. Results from this program should be available in the December quarter.

The Spotted Quoll **Mineral Resource**, including depletion to the end of September 2018, stands at **1.7Mt of ore at a grade of 5.3% Ni for 90,427 nickel tonnes.**

The Spotted Quoll **Ore Reserve**, including depletion to the end of September 2018, stands at **1.65Mt of ore at a grade of 4.0% Ni for 65,660 nickel tonnes**.



Growth Projects

Odysseus (or the "Project") Early Capital Works

The early capital works program progressed well during the quarter with the key activities detailed below:

- Refurbishment of the existing water management ponds (WMP) 1 to 5 and the Waste Dump Dam (WDD) were completed using a local indigenous earthmoving contractor;
- The earthworks contractor completed WMP8 and is well advanced with WMP9;
- Pipe-line construction to the Orleans open-pit completed and well advanced to the WMPs; and
- Ongoing manufacture of the specialised, custom-made, bore-hole pump is underway in USA and Singapore. The pump will be installed in the December quarter and will be lowered to 500m through the underground raise-bore pilot-hole to dewater the decline and associated underground workings.

Pumping from the Cosmos open-pit continued and, by quarter end, had dropped the water level 13m (approximately 30% of open-pit dewatered) at an average pumping rate over 45 litres per second, discharging to WMP 6 and 7 plus the WDD.

Odysseus DFS at Cosmos (up to 30 September 2018)

The DFS was nearing completion by quarter end, with only minor matters requiring finalisation. The main outstanding item was the significant write-up of the DFS documentation and presentation to the Western Areas Board for approval, which were completed post quarter end.

Importantly, in September the Department of Mines, Industry, Regulation and Safety approved the Project Management Plan for the decline underground rehabilitation which was an essential milestone for the Project.

The Company also completed due diligence and advanced negotiations on securing high quality second hand shaft hoisting equipment from South Africa.

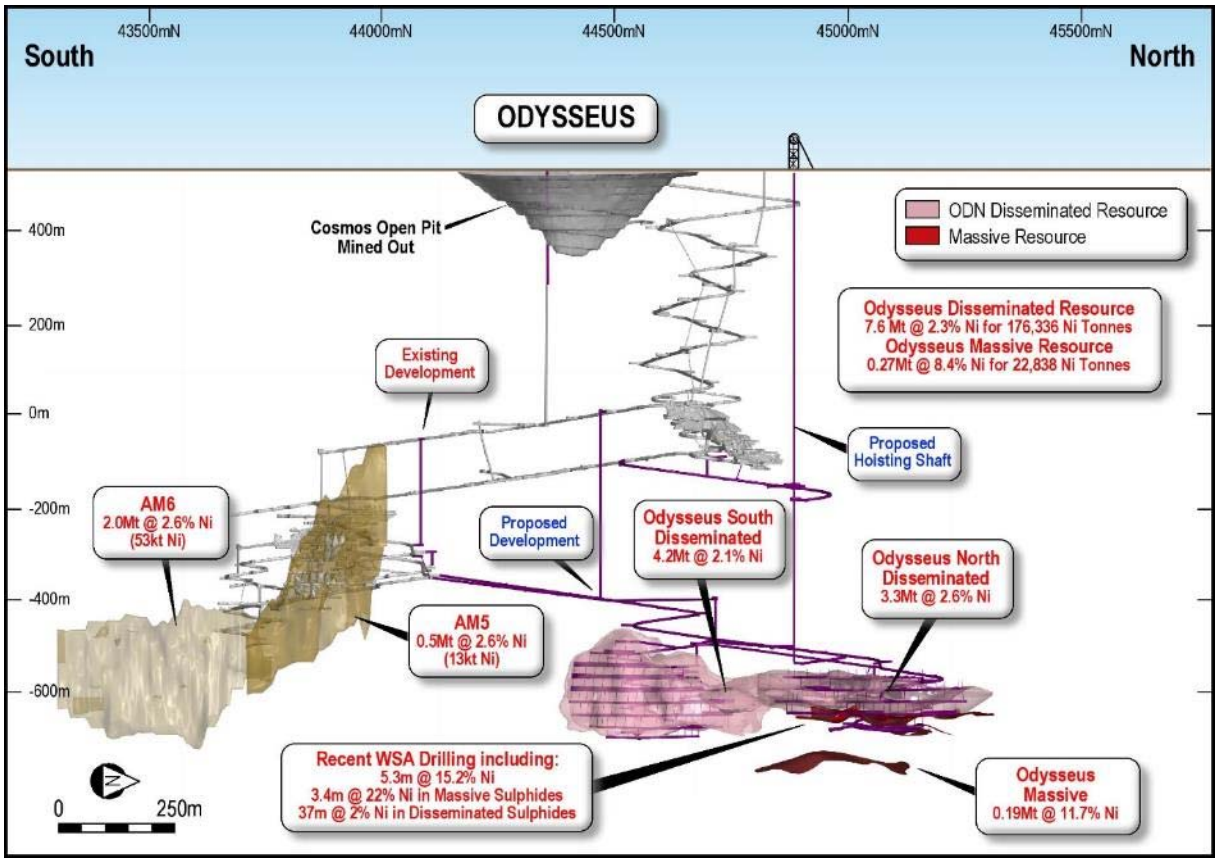
The Tjiwarl Directors and the Company concluded a heritage agreement to access the Yakabindie sand resource in September and started the four-month public advertisement period. This sand resource will ultimately be used as part of the paste-fill mix.

Contemporary shaft hoisting head gear and winder equipment option secured in South Africa

Post Quarter End – Odysseus DFS Approved and a Decision to Mine

On 22 October 2018, the Company announced that the Odysseus DFS had been completed and the Western Areas Board had approved a decision to mine. The announcement was a significant achievement for the Company for a number of reasons:

1. Validated the decision to make the counter-cyclical acquisition of Cosmos from Glencore in October 2015 for A$24.5m;
2. Utilises some of the Company's key core competencies including project identification, development of underground mining operations and optimising traditional flotation;
3. Significantly extends the mine life available in the asset portfolio that now goes beyond 2030;
4. Substantiates Odysseus as a low cost, economically sound operation at nickel prices below today's spot price, and importantly is planned to be producing class one nickel sulphides at a time forecast nickel demand for batteries in electric vehicles is expected to substantially increase;
5. Odysseus has capital expenditure optionality and can be funded for a number of years from the Company's existing cash reserves; and
6. Identified the significant upside opportunity to add further mine life or additional annual throughput, with studies to commence on assessing the inclusion of AM5 and AM6 Indicated Mineral Resources adjacent to Odysseus which contain 57,600 nickel tonnes.



Project Long Section

Odysseus Project Metrics

Mineral Resources	Tonnes (Mt)	Grade % Ni	Ni Tonnes (kt)
Indicated Resources	7.2	2.4	175
Inferred Resources	0.6	4.3	24
Total Mineral Resources	**7.8**	**2.6**	**199**
Ore Reserves	**Tonnes (Mt)**	**Grade % Ni**	**Ni Tonnes (kt)**
Probable Reserves	8.1	2.0	164
Total Ore Reserves	**8.1**	**2.0**	**164**
Capital Costs			
Pre-production total capital cost			**$299m**
Comprising: FY19			$12m
FY20			$49m
FY21			$76m
FY22 – 23			$162m
Post-production LOM			**$82m**
Production Parameters			
Life of mine (current Ore Reserves)			10 years
Ore tonnes mined			8.1Mt
Ore processing capacity			900 - 940ktpa
Nickel in concentrate – LOM			130kt
Cobalt in concentrate – LOM			2.4kt
Nickel in concentrate – LOM annual average			13kt
Life of Mine Financial Economics			
Base case nickel price assumption			US$7.50/lb
Exchange rate (AUD:USD) assumption			0.75
Revenue			$2,207m
C1 cash costs1			$2.65/lb (US$1.98/lb)
All-in sustaining costs2			$3.50/lb (US$2.63/lb)
EBITDA			$1,236m
Net cash flow (pre-tax)			$854m
Undiscounted cash breakeven nickel price			$6.10/lb (US$4.58/lb)
Pre-tax NPV (7% real)			**$418m**
IRR			**28%**
Capital payback period3			**3.5yrs**

[1] **C1 cash costs** means operating cash costs including mining, processing, geology, OHSE, site G&A less by-product credits, divided by nickel in concentrate produced (100% payable basis).

[2] **All-in sustaining cash costs** are cash operating costs (C1 cash cost plus sales transportation and royalties) plus mine development capital and sustaining capital.

[3] **Capital payback period** from date of first production.

The DFS included a number of significant changes compared to the March 2017 PFS, including a shift in operating methodology, which has culminated in a larger, longer life project, delivering substantially improved economic outcomes. Based on the same commodity pricing assumptions in the PFS (which are lower than consensus forecasts), Odysseus is expected to generate a 47% increase in free cash flow over the life of the Project (compared to the PFS) and contribute an average $130m per annum free cash flow (pre-tax) from FY23. A summary of the key metric changes from the PFS to the DFS are summarised on the table below:

Metric	Unit	DFS US$7.50/lb @ 0.75	PFS US$7.50/lb @ 0.75
Nickel in ore mined	Ni t	**164,500**	112,200
Nickel in concentrate	Ni t	**130,100**	87,400
C1 unit cost	A$/lb	**2.65**	3.21
AISC	A$/lb	**3.50**	3.69
Pre-production capex	A$m	**299**	190-210
Production LOM capex	A$m	**82**	68
Pre-tax free cash flow	A$m	**854**	580
Pre-tax NPV	A$m	**418**	292
Pre-tax IRR	%	**28**	28

High level commentary on changes from PFS

1. ***Nickel in Ore and Concentrate*** – due to a greater understanding of mineralogy and metallurgical recoveries, nickel in ore mined has increased 52.3kt (+46%) and nickel in concentrate has increased 42.7kt (+49%). The inaugural Ore Reserve for Odysseus is 8.1Mt @ 2.0% for 164kt of nickel.
2. ***C1 and AISC Unit Costs*** – with the incorporation of a shaft hoisting system, ore transportation costs have significantly reduced. Operating costs are based on contractor rates supplied by various parties during FY19. With additional annual concentrate production versus the PFS, fixed costs are also spread over more nickel production. AISC includes higher sales transportation costs with the assumption that the nickel concentrate will now be exported from the Geraldton Port.
3. ***Pre–production Capex*** – capex has increased between $99m and $109m from the PFS range, principally due to the installation of a shaft haulage system for $68m. Other contributing factors include an increase in the size of the mill to cater for higher throughput, additional paste plant capacity, dewatering and rehabilitation to AM5 and a general increase in the cost of parts, labour and ancillary items. The increase is partially offset by a reduction in mine development with the switch to a top-down (rather than bottom-up) mining methodology.
4. ***LOM Capex*** – the increase of $14m is driven by moving to a top-down mining method and a significantly longer mine life.
5. ***Pre-tax free cashflow, NPV and IRR*** – significant improvement in free cashflow (+47%) and NPV (+43%) is driven by additional nickel sales volume and a longer mine life, using the same commodity price and foreign exchange assumptions.

A maiden Ore Reserve was also released for Odysseus as shown in the table below

		Ore Reserve		
Zone	Reserve Category	Ore Tonnes (mt)	Grade % Ni	Ni Tonnes (kt)
Odysseus South	Probable	4.48	1.9	85.6
Odysseus North	Probable	3.65	2.2	78.9
Odysseus	**Total**	**8.13**	**2.0**	**164.5**

Mill Recovery Enhancement Project (MREP)

Following commissioning of the MREP in the June quarter, activities during the September quarter were focussed on the ramp-up of production volume for the next six months. Key activities undertaken included:

1. Bacterial farm operated in continuous mode which delivered the required rate of bacterial inoculum for the leach circuit;
2. Sulphide precipitation circuit continued to produce nickel sulphide, with grades around 48% Ni;
3. A small number of equipment failures were rectified and pro-active maintenance regimes were implemented; and
4. The pressure filter and separate bagging facilities, to enable the separate sale of product, were completed.

Small batches of nickel sulphide product were blended with the existing concentrate from the Cosmic Boy Mill and sold into the existing offtake agreements with Tsingshan and BHP Nickel West.

The Company finalised plans to include an additional process step to enable a stand-alone separate bagging of the high grade nickel sulphide concentrate which can be sold into a new offtake agreement targeting EV battery pre-cursor suppliers or producers. This new section of the plant, consisting of a pressure filter, bagging plant and associated ancillary equipment was successfully commissioned during the quarter on time and on budget. Following the distribution of small trial concentrate parcels to potential offtake parties, a larger batch of product is currently being produced and bagged ready for shipment to a potential buyer in late October.

Nickel Sulphide bagging plant

Stand-alone MREP nickel sulphide bagged product

New Morning/Daybreak Project

The New Morning/ Daybreak (NMDB) Feasibility Study commenced in July:

- The field component of the flora and fauna spring surveys (including stygofauna), waste rock characterisation and groundwater sampling were completed;
- Drilling of 12 geotechnical holes to underpin the open-pit design started in September;
- The haul road bypass conceptual design was completed; and
- Sample preparation and agglomeration of the disseminated hanging-wall ore diamond drill cores and reverse circulation rock chips was completed, with further leaching test-work due to start in the December quarter.

Exploration

Overview

Early in the quarter, the Company was pleased to announce a significant expansion of its exploration strategy in South Australia, with the execution of a Farm-In and Joint Venture Agreement with Iluka (Eucla Basin) Pty Limited on five tenements, contiguous with the Company's existing Western Gawler tenure. Following completion of a successful survey at Forrestania, an additional regionally extensive airborne electromagnetic (AEM) survey was completed at the Western Gawler project, surveying central portions of the tenure, covering some 1,584km² for 1,844-line kilometres.

At the Cosmos project, Phase 2 drilling at Neptune also concluded late in the quarter, with significant accumulations of disseminated nickel sulphides now identified over a strike length >1,200m.

St George Mining continued with several drilling and down-hole EM programs, with a particular focus on the Investigators prospect at the Mt Alexander Project. Tenement E29/638 is in joint venture between St George Mining (SQG 75%) and Western Areas (WSA 25% free-carried).

Kidman Resources continued exploration activities for lithium-bearing pegmatites across the quarter, with work focusing on collection of soil samples within tenement M77/550.

Exploration highlights over the quarter include:

- Several significant intersections returned from the Phase 2 Neptune program, including 52.5m @ 0.70% Ni within WCD017 and 25m @ 0.79% Ni from WCD018;
- Identification of numerous late-time EM anomalous responses from the recently completed SKYTEM AEM at survey at Parker Dome, with follow-up ground EM programs planned;
- Elevated nickel values from recent aircore drilling programs at Western Gawler, including 1.68% Ni and 2,160ppm Co at the Mystic prospect; and
- Successful completion of a SkyTEM312 HP heli-borne AEM survey at Western Gawler.

Cosmos

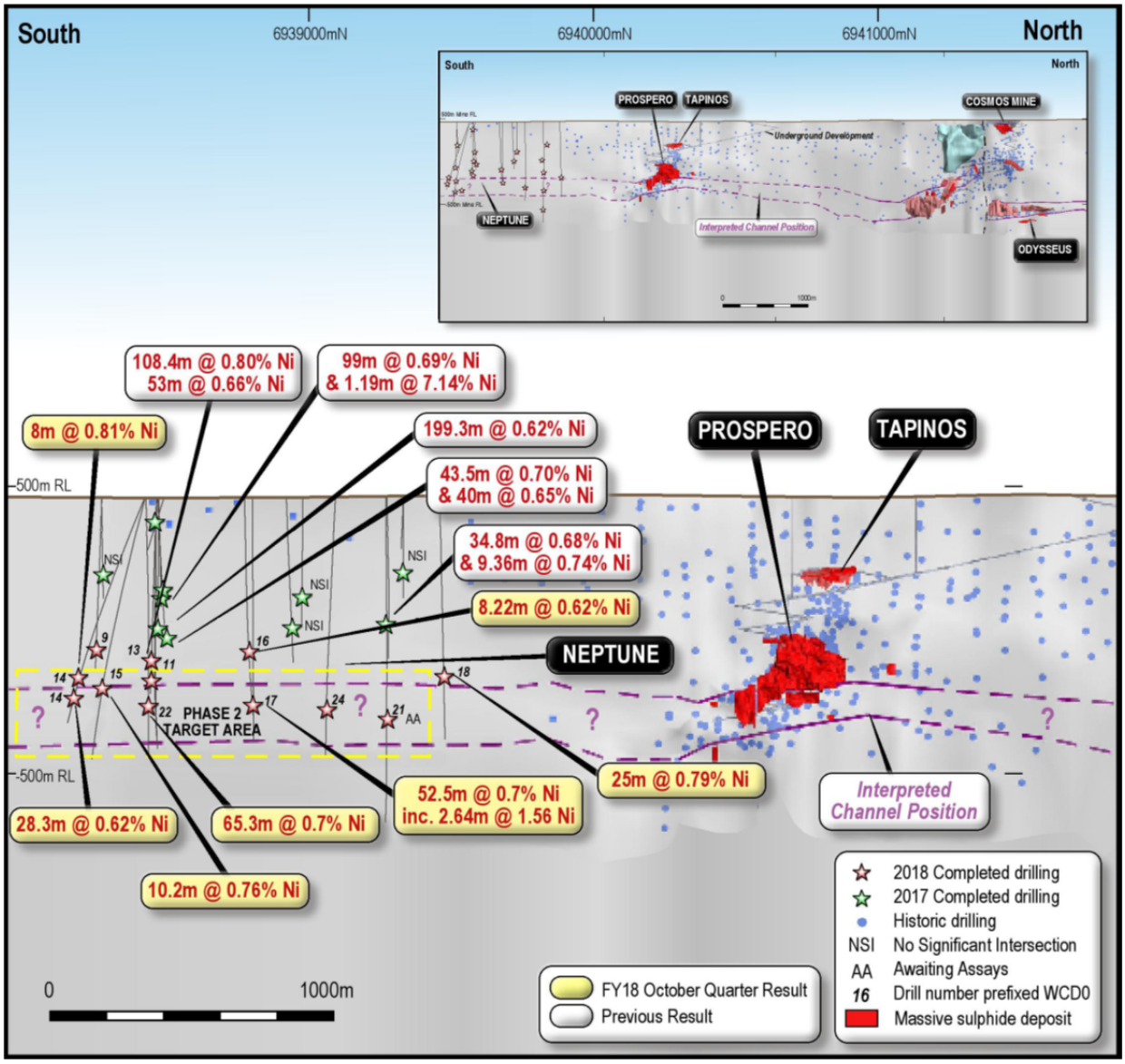
Exploration at Neptune

The Neptune project is located approximately 2km south of the Prospero high grade nickel mine and is interpreted to contain the highest volume of cumulate ultramafic bodies within the Cosmos Nickel Complex. The mineralised channel that hosts the Prospero and the Alec Mairs deposits (AM1, 2, 5 and 6) has the potential to extend towards, and link with, the mineralisation observed at Neptune.

Drilling of Neptune Phase 2 included a total of four diamond holes (for 2,998.6m) targeting a 1.5km corridor that now extends north towards 6939500N. Following the return of several encouraging broad cumulate ultramafic hosted disseminated zones of nickel sulphide mineralisation in the June quarter, the focus of recent drilling has centred on targeting the down-plunge extent of previously defined mineralisation, while also stepping out along strike, testing the potential of this prospective cumulate sequence to the north.

Drilling continued to successfully identify consistently thick sequences (>150m true thickness) of cumulate ultramafic bodies that host high-tenor, disseminated to locally stringer to semi-massive (possibly remobilised) nickel sulphides. Of particular note is the confirmation that this thick, highly prospective host sequence has now been delineated over a strike length >1200m. Results from several holes were returned in the quarter, confirming the persistent tenor nature of this mineralisation. Of particular note were results from WCD017, returning 52.5m @ 0.70% Ni, including a disseminated to stringer sulphide zone (predominantly fine-grained pentlandite) returning 2.64m @1.56% Ni. Results from the northernmost recently completed Neptune hole (WCD018) are also noteworthy, returning 25m @ 0.79% Ni.

Results from a single hole (WCD021) remain outstanding. While awaiting the return of these final assay results, 3D lithological modelling has been significantly advanced (from Neptune north towards Alec Mairs) with a view to further defining the architecture of the ultramafic cumulate corridor, in order to understand how this system relates to the Prospero-Tapinos massive sulphide deposits and enable ongoing targeting guidance.



Neptune interpreted long section (looking west)

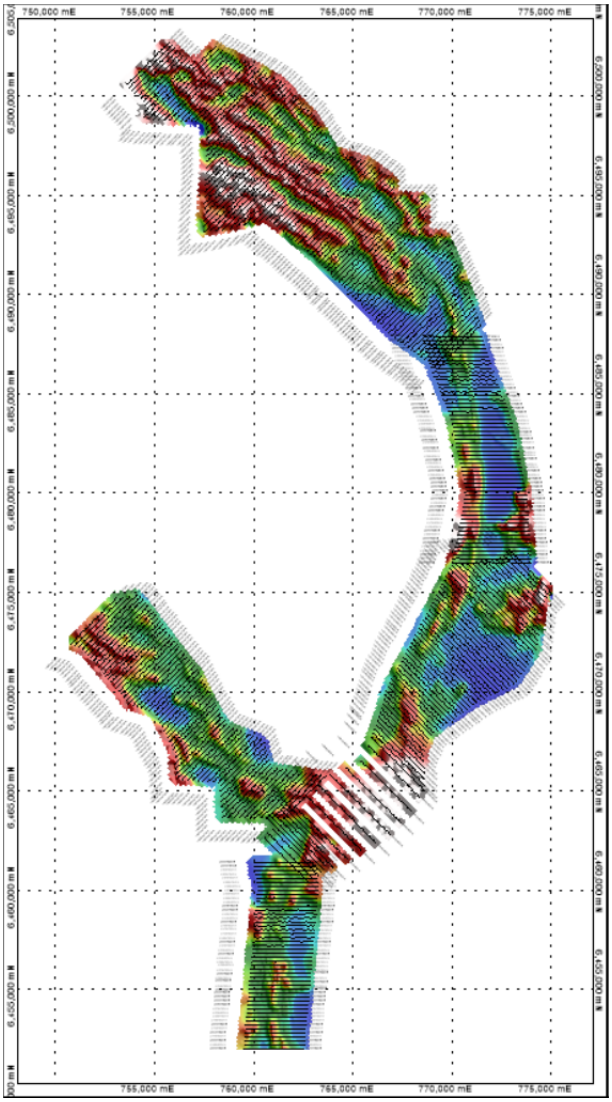
The Company is motivated by these results, as they further confirm the presence of an expanding corridor of prospective, fertile nickel-bearing ultramafic host units, lying less than 8km south of the Odysseus deposit.

	Exploration Results Nickel – Neptune September 2018									
HOLEID	Easting	Northing	RL	EOH	Type	Dip	Azimuth	Width (m)	Ni %	FROM (m)
WCD014	261791	6938458	460	982.6	DDH	-55	232	26.5	0.58	666
	and							8	0.81	756
	including							0.2	2.73	759.1
	and							28.3	0.62	797.7
WCD015	261791	6938458	460	990.5	DDH	-68.5	220	1.5	0.85	657.3
	and							10.2	0.76	679.8
	and							3	0.61	759
	and							3	0.59	824
WCD016	261654	6938799	460	747.8	DDH	-68	268	22.2	0.85	310.2
	including							8.4	1.15	313.4
	and							13.18	0.59	478
	and							8.75	0.7	503
	and							8.22	0.62	549
WCD017	261619	6938826	460	834.9	DDH	-85.5	95	2.5	0.51	443
	and							1	1.67	550
	and							27.25	0.58	641
	and							52.5	0.7	687
	including							2.64	1.56	706.25
	and							0.45	2.15	710.27
	and							0.2	3.41	713.7
WCD018	261448	6939475	461	831.7	DDH	-82	265	9.05	0.63	389
	and							25	0.79	598
	and							3.2	1.17	640.5
	and							4.18	0.69	651.7
WCD022	261786	6938457	460	912.62	DDH	-78.9	276.67	6.7	0.61	652.3
	and							65.3	0.7	667
	including							7.3	1.19	725

Forrestania

Exploration at Parker Dome

A regional-scale SKYTEM312HP system AEM survey (totalling 1,430 line kilometres and covering approximately 300km²) was completed late in the June quarter. Extensive processing and compilation of the survey data is now complete, with numerous late-time responses identified. Of these, several are subtle in nature and, coupled with our current geological understanding of the area, are coincident with greenstone sequences and known ultramafic corridors. Design work is currently underway to follow up these targets with ground EM, with surveying likely to be completed in early 2019.



SYKTEM flight lines over mid-channel (29) AEM amplitude Map

Exploration at Flying Fox

An underground exploration drilling and DHEM program commenced at Flying Fox in March and was completed in the September quarter, with DHEM surveys now completed on both holes (LUG087 and LUG088). This underground exploration program was designed to test for the presence of significant accumulations of nickel sulphides beneath the existing Flying Fox Mineral Resource.

LUG087 (completed in this quarter) failed to intersect nickel sulphides. Additionally, there was no anomalous response, suggestive of massive sulphides, observed within the DHEM survey. The completed DHEM survey within LUG088 generated a more complex EM response downhole. Work is ongoing to resolve the nature of this anomalous response.

Regional Exploration

Western Gawler Overview

Key highlights for the quarter include:

- Completion of an additional seven air-core holes (for 581m) at the Citadel prospect;
- Encouraging results at Mystic with anomalous nickel, cobalt and PGE assays returned;
- Completion of a regional-scale heli-borne EM survey across the Western Gawler project;
- Completion of a heritage clearance survey for drilling activities in the coming quarter; and
- Planning to support a heli-borne EM survey, within Iluka Farm-in Joint Venture tenements.

Western Gawler (WSA 100%)

A regional-scale air-core program was concluded during the quarter, testing prospect-scale targets in the Citadel area. In total, 7 holes were drilled (581m). The program, commencing in the previous quarter, was designed to test Moving Loop electromagnetic (MLEM) anomalies and a number of prospect-scale targets.

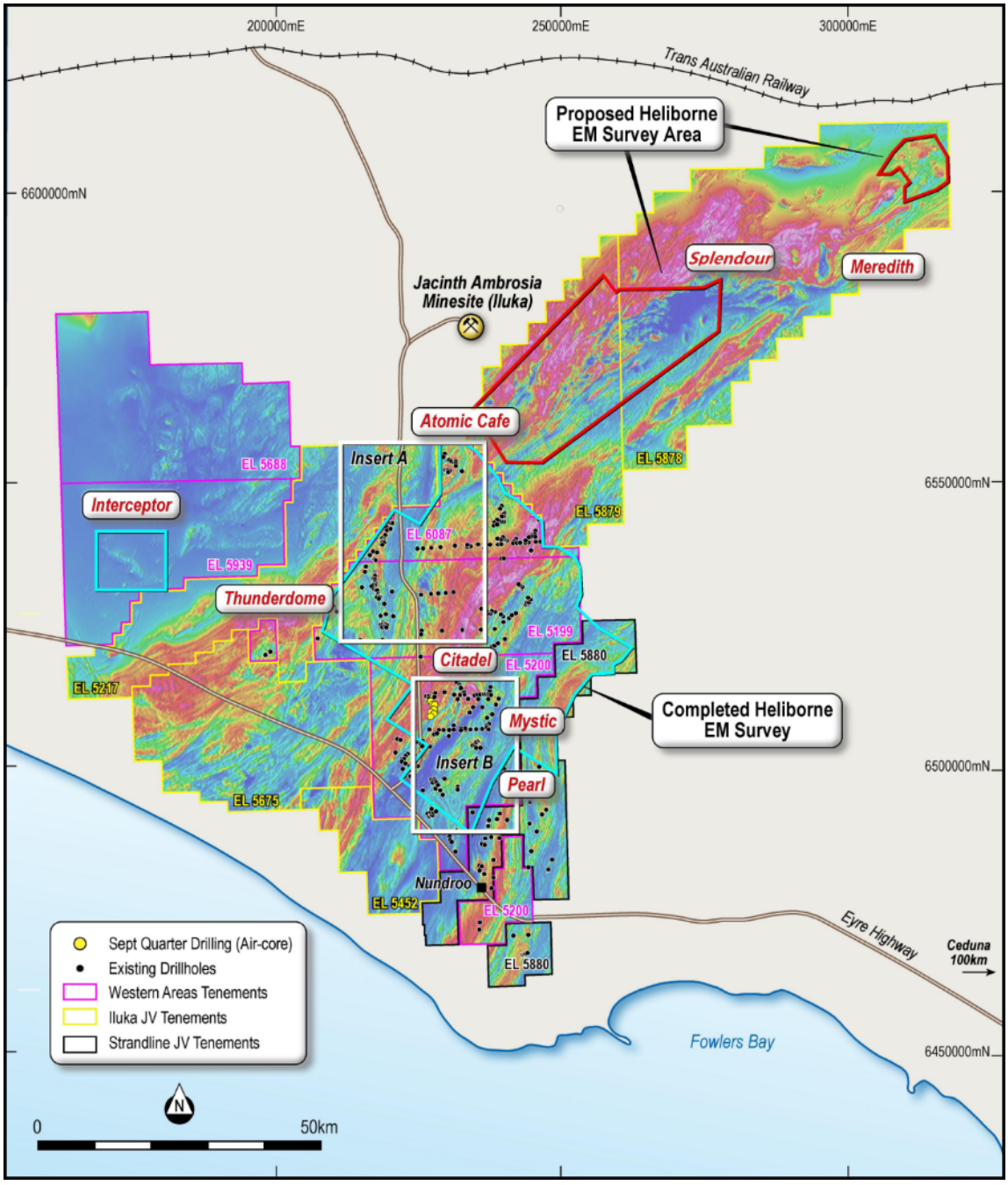
Mystic - Pearl Trend

At Mystic, assay results for drilling undertaken in the previous quarter returned elevated nickel, cobalt and PGE values (oxide zone), including 1.68% nickel, 2,160ppm Cobalt and 76ppm Pt+Pd within highly prospective mafic-ultramafic intrusive rocks in 18WGAC353 and 18WGAC354 (see table attached). Further work in the coming quarter includes extending MLEM survey coverage and RC drilling of interpreted mafic-ultramafic intrusions along this trend (Insert B).

Assays results returned from drilling at Thunderdome prospect intersected anomalous copper values associated with subtle EM anomalies within prospective mafic host rocks. Target areas at Thunderdome and Mystic will be a priority focus for follow-up work programmes in the coming quarter (Insert A).

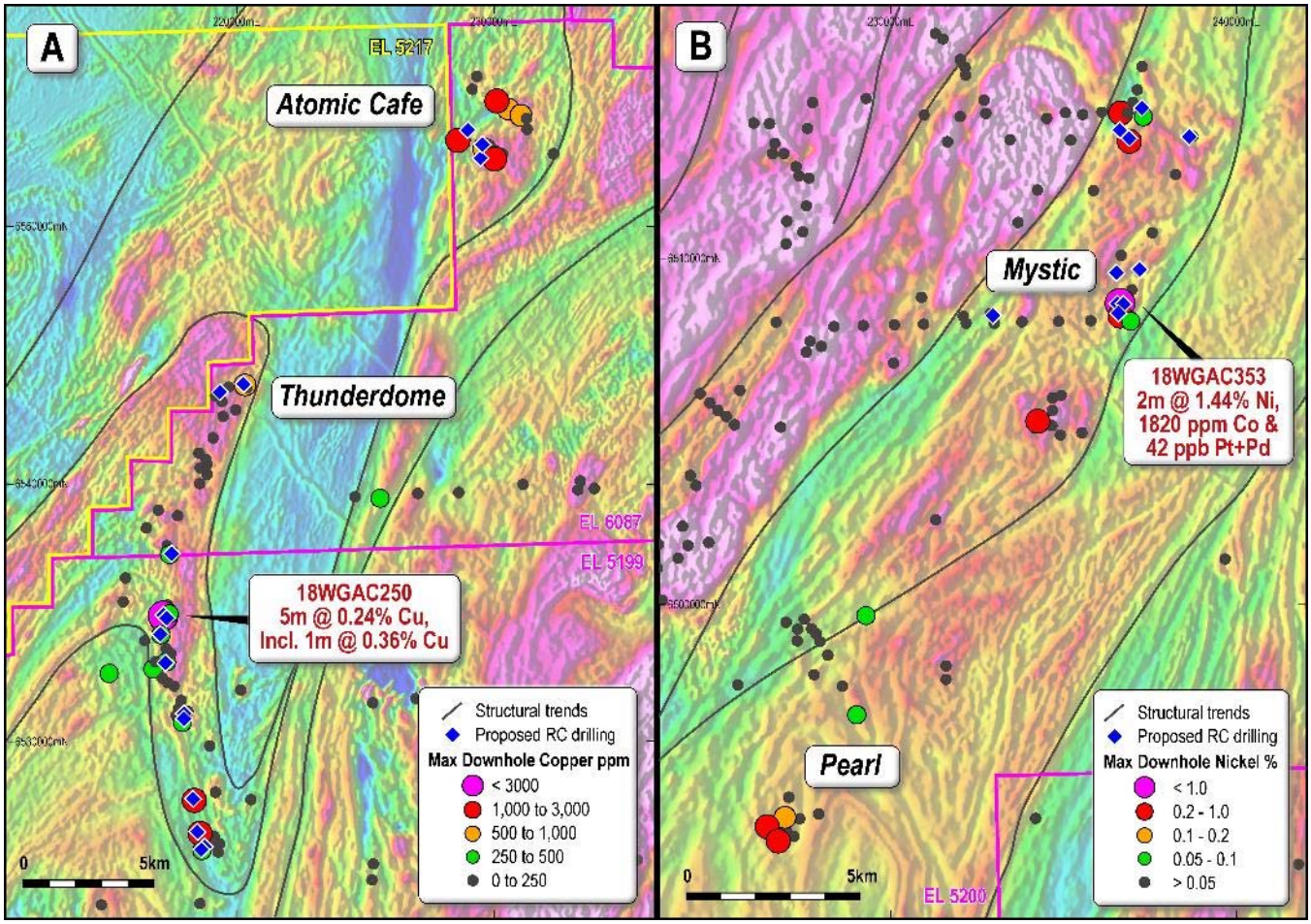
Airborne Electromagnetic Surveying (AEM)

During the quarter a regional-scale heli-borne EM Survey was completed over the Western Gawler Project. The survey was completed using the SkyTEM312 HP system, the most advanced AEM system in the world, which is optimised to provide exceptional depth of investigation due to the high current and low base frequency of 12.5 Hz. The primary objective of the survey was to define EM conductors with potential to represent semi-massive to massive sulphide bodies associated with Ni-Cu-Co-PGE mineralisation. The survey covered a strike-length of 65km over an area of 1,584 km² (1,844-line kilometres). Flight lines were initially surveyed at a 1,200m spacing, with infill lines at a 600m-300m spacing over areas with a lower conductive overburden response. The survey identified a total of 9 EM targets in areas of little or no previous drilling, including 5 moderate-response and 4 low-response target areas. Modelling and assessment of the AEM data is ongoing and will be used to guide additional interpretation and inform future drilling programs.



Western Gawler – September Quarter Activity

Exploration Results - Western Gawler September Quarter													
HOLEID	Easting	Northing	RL	EOH	Type	Dip	Azi	Width (m)	Cu %	Ni %	Pt+Pd (ppb)	Co (ppm)	FROM (m)
18WGAC353	236593	6508754	65	65	AC	-90	0	2	0.01	1.44	42	1820	55
including								***1***	***0.02***	***1.68***	***51***	***2160***	***55***
18WGAC354	236643	6508387	64	50	AC	-90	0	5	0.02	0.16	46	320	42



Recent anomalous results at Thunderdome and Mystic prospects

Moving Loop EM Survey Planning

Following the AEM work, planning was completed during the quarter to follow-up these AEM target areas with surface Moving Loop Electromagnetic (MLEM) surveys. A total of 10 survey areas are planned for 91-line kilometres in the coming quarter. Additionally, extensional MLEM surveying will be completed at Mystic to assess areas to the south of previous MLTEM survey areas.

Heritage Surveying

During the quarter a heritage clearance survey was completed within the Yellabinna and Aboriginal Lands Trust Reserves by representatives of the Far West Coast Aboriginal Corporation (FWCAC) and Yalata Anangu Aboriginal Corporation (YAAC). The heritage survey covered new targets generated from AEM surveying completed during the quarter and existing target areas. Additionally, FWCAC representatives have been actively providing ongoing rehabilitation support and monitoring activities for exploration programmes completed throughout the year.

Strandline Farm-in and Joint Venture (WSA earning up to 90%) EL 5880

During the quarter a heli-borne EM Survey was completed over the northern extents of EL 5880, using a SkyTEM 312 HP System. The survey was part of the regional Western Gawler AEM survey, which included some 188km² within EL 5880 (refer to section above). The survey identified four low to moderate response target areas. Forward work programs for EL 5880 includes MLEM surveys over two of the moderate ranking AEM target areas. Any resulting MLEM targets will be incorporated into follow-up drilling plans for 2019.

Iluka Farm-in and Joint Venture (WSA earning up to 75%) EL 5217, EL5452, EL 5675, EL 5878 and EL5879.

During the quarter, the Board of Western Areas announced an expansion to the Company's Western Gawler regional exploration strategy via the execution of a Farm-in and Joint Venture Agreement with Iluka (Eucla Basin) Pty Limited, a 100% owned subsidiary of Iluka Resources Limited. (refer to Western Areas Press release; 'New Strategic Joint Venture in South Australia', 31 July 2018)

Consistent with the Company's ongoing commitment to pursuing strategic regional exploration opportunities, this Agreement facilitates a staged program for Western Areas to acquire a 75% interest in base and precious metal rights, and all additional basement hosted mineral and rare earth elements across five key tenements (EL 5217, EL 5452, EL 5675, EL 5878 and EL 5879) in the Western Gawler region of South Australia, with Iluka retaining all rights to heavy mineral sands. The tenements, which cover 5070 km² (see figure) are contiguous with Western Areas' substantial existing tenure, the combination of which effectively represents 100% of the highly prospective Fowler Domain. The Company believes that combining the Iluka Joint Venture ground with its existing tenement holdings maximises the potential for a significant discovery.

Leveraging off the solid foundation of earlier geophysical surveying, target generation and focussed drilling programs completed by Iluka, Western areas will incorporate this information with its understanding of the area, to conduct a series of integrated, belt scale exploration targeting campaigns across the tenement portfolio. Western Areas has identified several emerging prospects on its existing tenure (including Thunderdome, Atomic Café, Citadel and Mystic) which host numerous prospective mafic and ultramafic bodies, along with their associated prospective corridors along strike, which extend into Iluka Joint Venture ground.

Exploration programmes will also focus on advancing several untested geophysical targets previously identified by Iluka. Planning during the reporting period was completed to support a heli-borne electromagnetic survey within the Iluka JV area, utilising the (SkyTEM 312 HP) system in the December quarter. The survey is designed to rapidly screen a large prospective corridor interpreted to host multiple prospective intrusions for semi-massive to massive sulphides to a depth of 250m. The ensuing data will be used to optimise targeting for regional exploration drilling campaigns in 2019.

-ENDS-

COMPETENT PERSON'S STATEMENT:

The information within this report as it relates to mineral resources, ore reserves and exploration results is based on information compiled by Mr Andre Wulfse, Mr Marco Orunesu Preiata and Mr Graeme Gribbin of Western Areas Ltd. Mr Wulfse is a Fellow of AusIMM, Mr Orunesu Preiata is a member of AusIMM and Mr Gribbin is a member of AIG. Mr Wulfse, Mr Orunesu Preiata and Mr Gribbin are all full time employees of Western Areas. Mr Wulfse, Mr Orunesu Preiata and Mr Gribbin have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.' Mr Gribbin, Mr Wulfse and Mr Orunesu Preiata consent to the inclusion in the report of the matters based on the information in the form and context in which it appears.

FORWARD LOOKING STATEMENT:

This release contains certain forward-looking statements including nickel production targets. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation, statements regarding plans, strategies and objectives of management, anticipated production and expected costs.

Examples of forward looking statements used in this report include: "The Company expects sales volumes to more closely match, or exceed production volumes next quarter as seasonal weather conditions pass", and, "Odysseus is expected to generate a 47% increase in free cash flow over the life of the Project (compared to the PFS) and contribute an average $130m per annum free cash flow (pre-tax) from FY23", and, "Odysseus has capital expenditure optionality and can be funded for a number of years from the Company's existing cash reserves".

These forward-looking statements are subject to a variety of risks and uncertainties beyond the Company's ability to control or predict which could cause actual events or results to differ materially from those anticipated in such forward-looking statements. Western Areas Ltd undertakes no obligation to revise these forward-looking statements to reflect subsequent events or circumstances.

This announcement does not include reference to all available information on the Company and should not be used in isolation as a basis to invest in Western Areas Ltd. Potential investors should refer to Western Areas' other public releases and statutory reports and consult their professional advisers before considering investing in the Company.

Western Areas Ore Reserve and Mineral Resource Statement – Effective date 30th September 2018

	Tonnes	Grade Ni%	Ni Tonnes	Classification	JORC Code
Ore Reserves					
1. Flying Fox Area	786,400	3.4	26,410	Probable Ore Reserve	2012
2. Spotted Quoll Area	35,700	4.0	1,440	Proved Ore Reserve	2012
	1,612,300	4.0	64,220	Probable Ore Reserve	2012
3. Diggers Area					
Digger South	2,016,000	1.4	28,950	Probable Ore Reserve	2004
Digger Rocks	93,000	2.0	1,850	Probable Ore Reserve	2004
TOTAL FORRESTANIA ORE RESERVE	**4,543,400**	**2.7**	**122,870**		
4. Cosmos area					
Odysseus South	4,484,000	1.9	85,600		
Odysseus North	3,652,000	2.2	78,900		
TOTAL COSMOS ORE RESERVE	**8,136,000**	**2.0**	**164,500**		
TOTAL WESTERN AREAS ORE RESERVE	**12,679,400**	**2.3**	**287,370**		
Mineral Resources					
1. Flying Fox Area					
T1 South	132,279	4.6	6,085	Indicated Mineral Resource	2012
	55,219	3.9	2,154	Inferred Mineral Resource	2012
T1 North	55,779	5.9	3,290	Indicated Mineral Resource	2012
OTZ Sth Massive Zone	20,560	4.1	843	Inferred Mineral Resource	2012
OTZ Sth Massive Zone	162,338	4.0	6,574	Indicated Mineral Resource	2012
T4 Massive Zone	187,671	5.6	10,440	Indicated Mineral Resource	2012
T5 Massive Zone + Pegs	836,246	5.3	44,112	Indicated Mineral Resource	2012
T6 Massive Zone	87,757	5.6	4,930	Indicated Mineral Resource	2012
T7 Massive Zone	256,977	2.1	5,303	Inferred Mineral Resource	2012
Total High Grade	1,794,826	4.7	83,730		
T5 Flying Fox Disseminated Zone	197,200	0.8	1,590	Indicated Mineral Resource	2004
	357,800	1.0	3,460	Inferred Mineral Resource	2004
T5 Lounge Lizard Disseminated Zone	4,428,000	0.8	36,000	Indicated Mineral Resource	2004
Total Disseminated Flying Fox/Lounge Lizard	4,983,000	0.8	41,050		
Total FF/LL	6,777,826	1.8	124,780		
2. New Morning / Daybreak					
Massive Zone	340,126	3.3	11,224	Indicated Mineral Resource	2012
	78,067	3.9	3,025	Inferred Mineral Resource	2012
Disseminated Zone	3,318,468	1.2	41,181	Indicated Mineral Resource	2012
	2,496,658	1.3	32,498	Inferred Mineral Resource	2012
Total New Morning / Daybreak	6,233,319	1.4	87,928		
3. Spotted Quoll Area					
Spotted Quoll	17,099	5.9	1,016	Measured Mineral Resource	2012
	1,537,730	5.5	84,871	Indicated Mineral Resource	2012
	144,581	3.1	4,540	Inferred Mineral Resource	2012
Total Spotted Quoll	1,699,410	5.3	90,427		
Beautiful Sunday	480,000	1.4	6,720	Indicated Mineral Resource	2004
Total Western Belt	15,190,555	2.0	309,855		
4. Cosmic Boy Area					
Cosmic Boy	180,900	2.8	5,050	Indicated Mineral Resource	2004
Seagull	195,000	2.0	3,900	Indicated Mineral Resource	2004
Total Cosmic Boy Area	375,900	2.4	8,950		
5. Diggers Area					
Diggers South - Core	3,000,000	1.5	44,700	Indicated Mineral Resource	2004
Diggers South - Halo	4,800,000	0.7	35,600	Indicated Mineral Resource	2004
Digger Rocks - Core	54,900	3.7	2,030	Indicated Mineral Resource	2004
Digger Rocks - Core	172,300	1.1	1,850	Inferred Mineral Resource	2004
Digger Rocks - Halo	1,441,000	0.7	10,350	Inferred Mineral Resource	2004
Purple Haze	560,000	0.9	5,040	Indicated Mineral Resource	2004
Total Diggers Area	10,028,200	1.0	99,570		
TOTAL FORRESTANIA MINERAL RESOURCE	**25,594,655**	**1.6**	**418,375**		
6. Cosmos Area					
AM5	479,914	2.6	12,430	Indicated Mineral Resource	2012
	26,922	1.9	509	Inferred Mineral Resource	2012
AM6	1,704,548	2.7	45,171	Indicated Mineral Resource	2012
	329,443	2.5	8,203	Inferred Mineral Resource	2012
Odysseus South Disseminated	4,016,949	2.1	84,767	Indicated Mineral Resource	2012
	219,641	2.0	4,302	Inferred Mineral Resource	2012
Odysseus North - Disseminated	3,128,943	2.6	81,156	Indicated Mineral Resource	2012
	225,248	2.7	6,111	Inferred Mineral Resource	2012
Odysseus North - Massive	70,106	12.6	8,814	Indicated Mineral Resource	2012
	124,900	11.2	14,002	Inferred Mineral Resource	2012
Total Cosmos Area	10,326,614	2.6	265,465		
7. Mt Goode Area					
Mt Goode	13,563,000	0.8	105,791	Measured Mineral Resource	2012
	27,363,000	0.6	158,705	Indicated Mineral Resource	2012
	12,009,000	0.5	62,447	Inferred Mineral Resource	2012
Total Mt Goode Area	52,935,000	0.6	326,943		
TOTAL COSMOS MINERAL RESOURCE	**63,261,614**	**0.9**	**592,408**		
TOTAL WESTERN AREAS MINERAL RESOURCE	**88,856,269**	**1.1**	**1,010,783**		

JORC 2012 TABLE 1 – Flying Fox

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• *The Flying Fox (FF) Deposit is sampled using diamond drilling (DD) on nominal 50 x 30m grid spacing.* • *Grade control data which includes sludge drilling and short hole diamond drilling results as well as face mapping are used to build the preliminary geological models.* • *Only assay results from an independent certified commercial laboratory from DD holes are used to estimate grades into the resource block model. Handheld XRF Spectrometers are used to gain a semi – quantative Nickel grade when core is first logged. These are replaced in the database by wet chemistry derived assay grades once received and are not used for resource estimation purposes.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• *Samples are taken in accordance with well established and properly documented company protocols* • *Sample representivity is assured by an industry standard internal QAQC program that includes certified reference standards, blanks and replicate samples.* • *QA results are routinely assessed by WSA Geologists and Quality Controls include re-assaying of batches of samples if the QA results are not within pre determined precision, accuracy and contamination thresholds.* • *All samples are prepared and assayed by an independent commercial laboratory whose analytical instruments are regularly calibrated.*
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Surface Diamond drill (DD) core is marked at 1m intervals and sample lengths are typically of this length. Grade Control drilling is typically 0.5m sample lengths through the mineralised zone due to whole core sampling* • *Sample boundaries are selected to match the main geological and mineralisation boundaries.* • *Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying*
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Diamond drilling comprised NQ2 sized core for underground and surface drilling and LTK sized core for the grade control drilling.* • *Standard tube is used in most cases unless core recovery issues are expected when triple tube is used. This is typically in the oxidised zone which has no bearing on any of the FF deposits.* • *All surface drilled core is oriented using ACT II control panels and ACT III downhole units. Grade control drilling is not oriented*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• *Core recoveries are logged and recorded in the database. Overall recoveries are >95% and there are no core loss issues or significant sample recovery problems in the sulphide zone.*
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• *Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers.*
	• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• *The bulk of the resource is defined by diamond core drilling which has high core recoveries.* • *The massive sulphide style of mineralisation and the consistency of the mineralised intervals are considered to preclude any issue of sample bias due to material loss or gain.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• *Geological logging is carried out to a very high level of detail which is peer reviewed* • *Geotechnical data such as RQD and number of defects (per interval) are recorded.* • *Information on structure type, dip, dip direction, alpha angle, beta angle, texture, shape, roughness and fill material is captured.*
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Logging of diamond core and RC samples records lithology, mineralogy, mineralisation, structural data (DDH only), weathering, colour and other features of the samples.* • *Core is photographed in both dry and wet form.*

Criteria	JORC Code explanation	Commentary
	• *The total length and percentage of the relevant intersections logged.*	• *All drillholes are logged in full. The Flying Fox database contains over 83,000 geological entries.*
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• *Core is cut in half on site (with the exception of underground grade control core) by diamond saw blades* • *Surface derived drill holes are halved again with one quarter sent for assay and one quarter preserved as a geological archive* • *Underground exploration derived drilling core is not halved again. Half of the cut core is sent for assay with the other half preserved as a geological archive* • *Underground grade control derived drilling core is not cut. Full core is sent for assay.* • *All core is prepared and assayed by an independent commercial certified laboratory. Samples are crushed, dried and pulverised to produce a sub sample for analysis by 4 acid digest with an ICP/AES finish*
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• *No non-core samples were taken for the purpose of this MRE.*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• *The sample preparation of diamond core follows industry best practice in involving oven drying, coarse crushing of the core sample down to ~10 mm followed by pulverisation of the entire sample (total prep) using LM5 grinding mills to a grind size of 90% passing 75 micron. Sample preparation is carried out by a commercial certified laboratory.* • *The sample preparation technique is well established and appropriate for Ni sulphide deposits.*
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• *Over and above the commercial laboratory's internal QAQC procedures, WSA includes field Ni standards ranging from 0.7% - 11.5% to test assay accuracy* • *Duplicates are routinely submitted by WSA to test sample precision* • *Standards are fabricated and prepared by Geostats Pty Ltd., using high – grade nickel sulphide ore.* • *Blank samples are routinely submitted by WSA to test sample contamination* • *Pulp duplicates obtained from the primary lab are taken on a 10% by volume basis and submitted to a secondary lab as an additional QAQC check*
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	• *Sample representatively is assured through the methods previously discussed* • *The Project Geologists are responsible for the management of the quality assurance program and assay results that do not conform are immediately brought to the attention of the relevant commercial laboratory so that remedial action can be implemented. Typically this type of action will involve re assaying the relevant batch of samples.* • *A monthly QAQC report is generated and distributed to the relevant stakeholders for review and follow up action*
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *The sample sizes are considered to be appropriate on the following basis: the style of mineralisation (massive sulphide), the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• *All samples are assayed by an independent certified commercial laboratory. The laboratory used by WSA is experienced in the preparation and analysis of nickel sulphide ores.* • *Samples are dissolved using nitric, perchloric, hydrofluoric and hydrochloride acid digest to destroy silica.* • *Samples are analysed for Al (0.01%), As (5ppm), Co (1ppm), Cu (1ppm), Fe (0.01%), Cr (1ppm),Mg (0.01%),Ni (1ppm), S (0.01%), Ti (0.01%) and Zn (1ppm) using an ICP or Atomic Absorption finish (typical detection limits in brackets).*
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• *No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE purposes.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *Standards and blanks were routinely used to assess company QAQC (approx 1 standard for every 15-20 samples). Duplicates were taken on a 10 % by volume basis (on underground drilling only), field based umpire samples were assessed on a regular basis. Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots. In occasional cases where a sample did not meet the required quality threshold, the batch was re-analysed.*
Verification of sampling and	• *The verification of significant intersections by either independent or alternative company personnel.*	• *Newexco Services Pty Ltd has independently visually verified significant intersections in the diamond core.*

Criteria	JORC Code explanation	Commentary
assaying	• *The use of twinned holes.*	• *No holes were twinned in the recent drilling programs.*
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• *Primary data was collected using Excel templates utilising lookup codes, on laptop computers. All data was validated by the supervising geologist, and sent to Newexco for validation and integration into an SQL database.*
	• *Discuss any adjustment to assay data.*	• *No adjustments were made to assay data compiled for this MRE.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• *Hole collar locations were surveyed by WSA surveyors. The Leica GPS1200 used for all surface work has an accuracy of +/- 3cm.*
	• *Specification of the grid system used.*	• *A two point transformation is used to convert the data from MGA50 to Local Grid & vice versa. Points used in transformation: MGA50 Points yd1="6409502.17" xd1="752502.175" yd2="6409397.856" xd2="753390.591"Local Grid Points ym1="28223.59"xm1="33528.771"ym2="28111.84"xm2="34415.995"*
	• *Quality and adequacy of topographic control.*	• *The accuracy of the pillars used in WSA's topographical control networks is within the Mines Regulations accuracy requirement of 1:5000 for control networks.*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• *Drillholes were spaced at an approx. 15m (northing) x 15m grid for the areas that will be affected by mining in the next two years and nominally 30m by 30m for areas that will be affected by mining in the subsequent years.*
	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*	• *The extensive drill program coupled with information derived from underground observations and previous open pit mining has demonstrated sufficient and appropriate continuity for both geology and grade within the Flying Fox Deposit to support the definition of Mineral Resources and Reserves, and the classification applied under the JORC Code (2012).*
	• *Whether sample compositing has been applied.*	• *Samples were composited to one metre lengths, making adjustments to accommodate residual sample lengths. A metal balance validation between the raw data and the composited data was undertaken with no material issues identified.*
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• *The Flying Fox deposit strikes at 030 degrees and dips nominally 65 degrees east. All underground and grade control drilling was conducted from west to east. All Surface drilling was conducted from east to west.*
	• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• *No orientation based sampling bias has been observed in the data.*
Sample security	• *The measures taken to ensure sample security.*	• *All core samples were delivered from site to Perth and then to the assay laboratory by an independent transport contractor.*
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *The FF data is managed and certified offsite by an independent contractor.*

Section 2: Reporting of Exploration Results – Flying Fox

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *Forrestania Nickel Operations comprises approximately 125 tenements covering some 900km2 within the Central Yilgarn Province. The tenements include exploration licences, prospecting licences, general purpose leases, miscellaneous licences and mining leases.* • *Western Areas wholly owns 106 tenements, 55 tenements of which were acquired from Outokumpu in 2002 and a further 51 tenements acquired from Kagara in March 2012 (some which are subject to various third party royalty agreements). The remainder of the tenements are subject to Joint Ventures, 14 tenements are part of the Mt Gibb JV where Western Areas has the right to earn 70% interest from Great Western Exploration (currently at 51% WSA) and the Lake King JV where Western Areas has earned a 70% interest from Swanoak Holdings.* • *A number of the Kagara tenements are subject to third party royalty agreements.* • *All the tenements are in good standing.*

Criteria	JORC Code explanation	Commentary
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• *Western Areas has been exploring its wholly owned tenements since 2002. The tenements subject to the Kagara sale which took place in March 2012 were explored by Kagara since 2006 and Lionore and St Barbara prior to that time. Western Areas has managed both the Mt Gibb JV since 2009 (Great Western Exploration explored the ground prior to that time) and the Lake King JV since 2007 (A small amount of work was carried out by WMC prior to that date)*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *The deposits lie within the Forrestania Greenstone Belt, which is part of the Southern Cross Province of the Yilgarn Craton in Western Australia. The main deposit type is the komatiite hosted, disseminated to massive Nickel sulphide deposits, which include the Flying Fox and Spotted Quoll deposits. The mineralisation occurs in association with the basal section of high MgO cumulate ultramafic rocks.* • *The greenstone succession in the district also hosts a number of orogenic lode gold deposits of which Bounty Gold Mine is the biggest example.*
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* – *easting and northing of the drill hole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* – *dip and azimuth of the hole* – *down hole length and interception depth* – *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• *The MRE is based upon over 7,000 geologic entries derived from over 1,000 surface and underground diamond holes over multiple domains and years of surface and underground drilling. All of this information can be considered material to the MRE and the exclusion of a summary of the data does not detract from the understanding of the report.*
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *Standard length weighted averaging of drill hole intercepts were employed. No maximum or minimum grade truncations were used in the estimation.* • *The reported assays have been length and bulk density weighted. A lower nominal 0.4% Ni cut-off is applied during the geologic modelling process and later during the MRE reporting process. No top cut is applied. High grade intercepts internal to broader zones of mineralisation are reported as included intervals.* • *No metal equivalent values are reported.*
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• *The incident angles to mineralisation are considered moderate.* • *Due to the often steep dipping nature of the stratigraphy reported down hole intersections are moderately greater (m/1.5 ratio on average) than the true width.*
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• *Refer to Figures in the text*

Criteria	JORC Code explanation	Commentary
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *Only Mineral Resource Estimation results are reported.*
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• *Multi-element analysis was conducted routinely on all samples for a base metal suite and potentially deleterious elements including Al, As, Co, Cr, Cu, Fe, Mg, Ni, S, Ti, Zn, Zr. All diamond core samples were measured for bulk density which range from 2.90 - 4.79g/cm^3 for values >0.5% Ni.* • *Geotechnical logging was carried out on all diamond drill holes for recovery, defects and RQD.* • *Information on structure type, dip, dip direction alpha and beta angles, texture, shape, roughness and fill material is stored in the structural logs in the database.*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *Exploration within the FNO tenements continues to evaluate the prospective stratigraphic succession containing the cumulate ultramafic rocks using geochemical and geophysical surveys and drilling.*

Section 3 Estimation and Reporting of Mineral Resources – Flying Fox

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	• *All data has been recorded in Excel templates with reference lookup tables. All data is imported into an AcQuire relational database*
	• *Data validation procedures used.*	• *Data validation is a fundamental part of the AcQuire database and is implemented via referential integrity and triggers. Referential constraints ensure that, for example, Hole ID matches collar and downhole data. Triggers check criteria such as code validity, overlapping intervals, depth and date consistencies. All fields of code data have associated look-up table references. Data was further validated using Datamine validation tools during the MRE process.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	• *Andre Wulfse who is the Competent Person is the Group Resource Manager for Western Areas and has made many site visits to the Flying Fox Deposit. His first visit to the deposit was in 2008.*
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	• *Due to the spacing of drilling and the understanding of similar deposits within the Forrestania Ultramafic Belt, the geological interpretation is considered to be sound. The deposit is mainly located along the traditional footwall of the basal ultramafic metasediment contact, which was the original locus for sulphide deposition from an overlying pile of Komatiite flows. Subsequent metamorphism, deformation and intrusion of granitoid sills have contributed to a complex setting, with mineralisation now occupying a possible shear zone. The geological model is updated on a daily basis by a team of mine geologists based on detailed underground mapping of ore drives.*
	• *Nature of the data used and of any assumptions made.*	• *Lithogeochemistry and stratigraphic interpretation have been used to assist the identification of rock types. No assumptions are made.*
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• *Alternative interpretations of the mineral resource were considered. In particular the previous model as well as the grade control model for the upper levels was extensively validated against the current geological and resource model. Alternative interpretations of mineralisation do not differ materially from the current interpretation. WSA has successfully planned and reconciled the deposit using a similarly derived geological and resource model.*

Criteria	JORC Code explanation	Commentary
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• *The Mineral Resource Estimate is based upon a robust geological model which is regularly updated. The hanging wall and footwall contacts of the mineralised zone were modelled with a level of confidence commensurate with the resource classification category. The extents of the geological model were constrained by drillholes intercepts and extrapolation of the geological contacts beyond the drill data was minimal for the Indicated category.*
	• *The factors affecting continuity both of grade and geology.*	• *Key factors affecting geologic continuity relate to pervasive felsic intrusive units and faults in the deper parts of the FF orebody. The nugget effect associated with Ni mineralisation in these types of deposits affects the grade continuity. The geological discontinuities have been modelled and the grade discontinuities have been accounted for in the estimation modelling.*
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• *The strike length of the Flying Fox deposit varies considerably but is up to 750 m in the T5 deposit .Distance from the top of T4 to the base of T5 is approximately 550m. The mean width of the deposit is 2.2m*
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• *Grade and ancillary element estimation using Ordinary Kriging and Inverse Power Distance (IPD) was completed using DatamineTM Studio 3 software. The methods were considered appropriate due to drill hole spacing and the nature of mineralisation.* • *All estimation was completed at the parent cell scale thereby avoiding any potential geostatistical support issues.* • *Sample data was composited to 1m downhole lengths and flagged on domain codes. Metal balance validation tests were performed on the composites to ensure zero residuals.* • *Top cut investigations were completed and no top cuts were applied on the basis of grade distribution, Coefficient of Variation and a comparative analysis of the underground data vs the drilldata.* • *Sample data was flagged using domain codes generated from 3D mineralised wireframes. Qualitative Kriging Neighbourhood Analysis was used to determine the optimum search neighbourhood parameters.* • *Directional variography was performed for Ni and selected ancillary elements. Nugget values are typical for the type of mineralisation (Ni = 20%-40% of the total variance). Ranges of continuity for Ni vary from 20m to 60m in the direction of preferred orientation of mineralisation. Estimation validation techniques included swathe plots of the grade of the composites vs the grade of the block model.*
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• *This MRE is an update of an MRE that was undertaken in 2014 and was extensively validated against the 2014 MRE.*
	• *The assumptions made regarding recovery of by-products.*	• *No assumptions were made about the recovery of by products in this estimate. WSA currently doesn't have any off take agreements in place for by-products.*
	• *Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).*	• *No elements are considered to be deleterious elements in the Flying Fox deposit*
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• *A proto model was constructed using a 5mE x 5mN x 5mRL parent size, with sub cells. The parent cell size was selected on the basis of orebody geometry, drill spacing and SMU.* • *Thereafter individual block models were designed for each of the structural domains. The dips of the wireframes of the structural domains were used to optimally fill the wireframes with blocks. Drill spacing varies but is nominally 30m by 30m in areas that will be affected by mining in the next two years and 60m by 60m in subsequent areas.* • *The size of the search ellipse was based on the drill hole spacing and structural domain dimensions. Search neighbourhoods varied according to the structural domain*
	• *Any assumptions behind modelling of selective mining units.*	• *No selective mining units were assumed in the estimate. Mining is mainly by longhole stoping and stope dimensions are largely determined by the nature of the equipment used. A global grade and width cut off is applied at the mine planning stage.*
	• *Any assumptions about correlation between variables.*	• *No assumptions were made about correlation between variables. Apart from a strong correlation between Ni% and bulk density, no other interelement correlations are observed.*

Criteria	JORC Code explanation	Commentary
	• *Description of how the geological interpretation was used to control the resource estimates.*	• *The geological interpretation was developed using geological, structural and lithogeochemical elements. The geological framework associated with extrusive komatiite hosted deposits, and the structural elements observed at the local and wide scale were used to determine and refine mineral domains. The hangingwall and footwall contacts of mineralisation were used as hard boundaries during the estimation process and only blocks with the geological wireframe were informed with Ni grades.*
	• *Discussion of basis for using or not using grade cutting or capping.*	• *Geostatistical and visual investigation of the grade distribution negated the need for grade cutting or capping.*
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• *Validation of the block model included comparing the volume of domain boundary wireframes to block model volumes. It also involved comparing block model grades with drill hole grades by means of swathe plots showing easting, northing and elevation comparisons.* • *Jacknifing and visual grade validations were undertaken.* • *Grade and tonnage reconciliation of the previous model has been closely monitored over the past 12 months of underground mining and found to be within acceptable thresholds.* • *The assumptions and methodologies used during this estimation are very similar to that of the previous model.* • *Visual validation of the block model vs the drillhole data was undertaken in Datamine and Leapfrog* • *Based on a thorough validation and verification exercise, WSA is satisfied that the estimate is robust.*
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• *Tonnages were estimated on a dry basis.*
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• *The mineral envelope was determined using a nominal 0.4% Ni grade cut-off. The resource is reported at a 0.4% Ni cut-off which is a reasonable representation of the mineralised material prior to the application of variable economic and mining assumptions and a reserve cut-off*
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	• *The Flying Fox deposit is currently being mined using long hole stoping methods. The mining method which is unlikely to change has been taken into account during the estimation process.*
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• *Ore from the Flying Fox deposit is currently being processed on site, where Nickel concentrate is produced using a three-stage crushing, ball mill, and flotation and thickener/filtration system.*
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not*	• *All waste and process residue is disposed of through the Cosmic Boy concentrator plant and its tailings dam. All site activities at site are undertaken in accordance with WSA's environmental policy.*

Criteria	JORC Code explanation	Commentary
	been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	• *Bulk Density has been determined using a tried and tested Ni grade regression based formula.*
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	• *Core at Flying Fox is generally void of vugs, voids and other defects. Rocks are from the granulate facies sequence and faults have largely been annealed. Porosity is considered low.*
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• *As discussed previously, mineralisation is mainly restricted to a single material type (Massive Sulphide)*
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• *The Flying Fox Mineral Resource is classified as Indicated and Inferred on the basis of geologic understanding, drillhole spacing, underground development and Kriging quality parameters. No blocks were classified as Measured.*
	• *Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• *The definition of mineralised zones is based on a high level of geological understanding. The model has been confirmed by infill drilling, supporting the original interpretation. It is believed that all relevant factors have been considered in this estimate, relevant to all available data.*
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• *The Mineral Resource Estimate appropriately reflects the view of the Competent Person.*
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• *This is a follow up of a previous Mineral Resource Estimate that was completed and reported in accordance with the JORC Code (2004) and has not been externally reviewed*
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• *The geological and grade continuity of the Flying Fox deposit is well understood and the mineralisation wireframes used to build the block model have been designed using all available exploration and mining data. Furthermore, previous estimates of grades have been tested by routine reconciliation of stockpile and mill grades to the current grade control and previous resource models. Post processing block model validation was extensively undertaken using geostatistical methods before the resource was reported.*
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used*	• *The statement relates to global linear estimates of tonnes and grade.* • *The grade tonnage summary by Class is given in the accompanying report*
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• *Tonnes and grade estimates within the blocks are consistent with past production data.*

Section 4 Estimation and Reporting of Ore Reserves – Flying Fox

(Criteria listed in section 1 and 3, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	*Western Areas Ltd (WSA) undertook a review of the Flying Fox deposit (FF) during Financial year 2018 after the completion of the new drilling campaign. The underlying Mineral Resource was issued in September 2018 Quarterly Report.* *The Mineral Resources are reported inclusive of the Ore Reserves.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken*	*Flying Fox is an operating underground mine since 2005. The Competent Person carries out routine site visits of the deposit and its infrastructures as part of normal working duties.*

Criteria	JORC Code explanation	Commentary
	indicate why this is the case.	*WSA set up a data collection and record system to manage Flying Fox operation from a technical and economical point of view. All these data are used in the present Ore Reserves estimation.* *Mine design and mining method is based primarily on the recommendations laid out in the updated Feasibility study and back analysis data from the current mining practice.*
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	*WSA completed in 2004 a Feasibility Study for T1 and in 2006 the Feasibility Study for T5. This last study has been updated and kept alive with the current practice and data coming from the experience gained in 12 years of mining and recorded in the company system documents.* *The present Ore Reserves estimation is an update that considers the new Mineral Resources, the performance of the operation to date and a revised commodity price estimate.*
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	*An Ore Reserve cut-off grade of 1.5% Ni was selected to obtain an Ore Reserve that fits the following criteria:* • *Minimum Head Grade fitting the Mill requirements.* • *Ore Reserve average grade equal or greater than Life of Mine breakeven grade.* • *Mean Arsenic concentration that enables production of a saleable concentrate.* • *Positive LOM NPV* • *Maximise steady state production* • *LOM Nickel price curve from USD5.50/lb @ FX0.775 to USD7.50/lb @ FX 0.75.* *Some of the key ore reserve assumptions are considered commercially sensitive, however as the mine has been in operation for some years the reserve cut off parameters are developed using historical operating performance and statistics. More details regarding cut off parameters are reported in the following sections.*
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	*The mining method used is a mix of direct AVOCA, reverse AVOCA long-hole stoping with bottom up sequence and rock and cemented rock fill above the 425 level. A long-hole top down sequence and paste filling of resultant voids is used below the 425 level.* *Mining Model has been realised with 5DPlanner and EPS Codes (CAE software house). Mining factors have been selected using historical performance data of the deposit, particularly:* • *The Mineral Resource model used is in Datamine format. It combines the Resources models for Flying Fox mine and has been released in September 2018 Quarterly report.* • *The minimum mining width is 2.5 metres.* • *The max stable stope length is 20 metres with a stope height between 8 and 17 metres along dip. Other geotechnical parameters are contained in the current Ground Control Management Plan.* • *Stope Planned dilution is 0.5 metres in Hanging Wall and 0.25 meters in the foot Wall.* • *A halo of low-grade material averaging 0.4% Ni is used just for T5 area. No low grade halo is assigned to the material outside the other parts of Flying Fox. 0% Ni grade is assigned to the material outside the block model.* • *Stope Unplanned dilution (from hosting rock and fill) from 10.0% to 14.5% in weight at 0 Ni%.* • *Standard SG for dilution is 2.8 t/m^3.* • *Ore recoveries ranges from 80% to 100% in the stopes in function of the ground conditions, their location within the ore body, and extraction sequence; and 100% in the ore drives.*

Criteria	JORC Code explanation	Commentary
		• *Pillar factor for unplanned pillars is 2%.* • *Production rates reflect current mining performances and practice.* *No Inferred material has been utilised for the Ore Reserves estimation.* *Flying Fox is an operating mine. All infrastructures (with the exception of future capital development and external plants) are present and utilised on site, and allowance, based on technical studies, is made in the CAPEX expenditure of the Life of Mine for the new infrastructures.*
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	*The metallurgical factors used are from existing Cosmic Boy concentrator conventional nickel sulphide floatation techniques and historical data. Figures used are considered commercially sensitive by the company and may be made available by request.* *The metallurgical process is a well tested technology for Nickel Sulphides recovery with three stages of fragmentation with wet screening for size classification, one milling stage with cyclone size classification and two stages of flotation including Arsenic rejection. A small stream of the flotation feed is anticipated to be sent to the Hydrometallurgical section of the concentrator that uses the BioHeap® technology to improve the overall recovery* *The resultant concentrate is sold into existing off-take contracts with BHP and Tsingshan.*
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.*	*The Flying Fox mining operations (FFO) operated by Western Areas Ltd (Western Areas), received final environmental approval to mine nickel sulphide ore as an underground operation in December 2004. Approvals were provided under Western Australian legislation; initially being the Mining Act 1978 (M Act) and later Part V of the Environmental Protection Act 1986 (EP Act). Since then, several other M Act approvals have been sought and received relating to the deepening of the Flying Fox mine and the extension of surface infrastructure required for mining operations. Additional approvals under Part V of the EP Act have also been sought in the form of Works Approvals and Prescribed Premises Licence amendments for various types of mining related infrastructure.* *Other relevant approvals from state and local government include endorsements to produce drinking water via reverse osmosis and store it onsite and licences to construct habitable buildings and construct and operate septic waste water treatment facilities.*
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	*All necessary infrastructures for the Flying Fox mine are present and operational on site (not including future capital underground development and external plants). Allowance, based on technical studies, is made in the CAPEX expenditure of the Life of Mine for the new infrastructures planned in Life of Mine plan.* *Flying Fox is supplied by Western Power 33kV overhead power-line from the Bounty switchyard 60km to the north of the mine-site.* *Potable water is produced via RO plants located at CB concentrator and pumped via a pipeline to the mine-site. Process water is recycled from the mine dewatering network.* *Bulk material logistics is predominately via conventional truck haulage.* *Mine personnel reside at the nearby Cosmic Boy Village (529 rooms) and are predominately a FIFO (via CB airstrip) workforce with some minor DIDO.* *The mine-site is 80km to the east of the Hyden township and has two main gazetted gravel road accesses (east from Hyden and south from Varley)*

Criteria	JORC Code explanation	Commentary
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	*Capital Underground Development costs are derived from the LOM plan based on existing contracts and historical performance and data.* *All other Capital costs are sourced as necessary via quotes from suppliers or technical studies.* *Mining, processing, administration, surface transport, concentrate logistics and state royalty costs are based on existing cost estimates.* *The nickel price and FX assumptions used were sourced from industry standard sources* *Nickel price from USD5.50/lb @ FX0.775 to USD7.50/lb @ FX 0.75.* *Net Smelter Return (NSR) factors were sourced from existing concentrate off-take contracts.*
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *the derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	*These have been selected after consideration of historical commodity prices variations over time and the requirement for the Reserve to be robust to potentially volatile commodity price and foreign exchange conditions.* *The price setting mechanism for the sale of product subject to this report is traded openly on the London Metals Exchange ("LME").* *Potential penalties and net smelter revenue factors are included in the Smelter Return factor used. This factor is based on the historical data from previous FY and is considered commercially sensitive by the company. Figures may be produced by request.* *Two main selling contracts structures are currently used by Western Areas. One has copper as a co-product and the second doesn't have any co-product. Allowance for this selling parameter is included in the Smelter Return factor.*
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	*The commodity subject to this report is traded openly on the London Metals Exchange ("LME").* *The Company has for many years maintained both long and short term offtake sales contracts with multiple customers, both locally and internationally.* *Existing contracts have been assessed for the sales volume assumptions.* *As the Company has been supplying multiple customers over a significant time period no acceptance testing has been assumed in the reserve development process.* *These contracts have fixed dates in which the contract itself is reviewed and/or expires. The assumption to extend these contracts and the current sold volumes to the end of LOM has been made in order to assess the Ore Reserve.* *For the Nickel price assumptions refer to the previous sections.*
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	*The Company has been operational for a significant period of time with contracts in place for ore mining, processing and concentrate haulage. Furthermore the operation, subject to this report, has an in-situ operating concentrator facility. As such the actual visible operating and contract rates (including rise and fall where appropriate) has been used in the NPV economic assessments. Figures are considered commercially sensitive by the company.* *The discount rate has been estimated as the weighted average cost of capital for the Company.*
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	*All legal permits to mine Flying Fox have been obtained by Western areas following the paths described by the relevant laws with the participation of the local communities (see previous points).*

Criteria	JORC Code explanation	Commentary
		As a company policy (CDMS-000610-Social Responsibility Policy), the relations with the local communities and territories are a key part of operational management.
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	*It is noted that mining operations are an inherently risky business in which to operate, no other risk factors apart from the normal risk components included in all the above points and assumptions have been identified.*
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	*Flying Fox has the following Ore Reserves at the 30th of September 2018:* *Probable Ore Reserves of 786,400 ore tonnes at 3.4% for 26,410 Nickel tonnes* *Ore reserves derive entirely from Indicated Mineral Resource and the result appropriately reflects the Competent Person's view of the deposit.*
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	*Audits/Reviews of the present report have not been done because of the high confidence in the data used and the constant performance of the operation. A review may be done by external request.*
Discussion of relative accuracy/confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	*The confidence in the present evaluation is from the fact that Flying Fox is a well establish operating mine with a sound performance database.* *The present estimation, for the nature of the commodity mined, refers to global market conditions (see above points for the assumptions).* *As is normal in mining operations, the key points that can have a significant impact on the performance of the Flying Fox Mine are the market conditions in general, and the Nickel price and the currency exchange rates in particular. All the other parameters are derived from sound historical production data.*

JORC 2012 TABLE 1 – Spotted Quoll

Section 1: Sampling Techniques and Data

Criteria	JORC Code 2012 Explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• The Spotted Quoll Deposit was sampled using diamond drill (DD) and reverse circulation holes (RC) on a nominal 50 x 30m grid spacing as well as underground channel sampling in a limited area. • Although all available valid data was used to design the geological model, only diamond hole data was used to estimate the grade and ancillary variables into the resource model. • About 3,000 composites derived from approximately 680 drillholes were used to estimate the grades. This represents a drilling pattern smaller than 40m by 40m over the full extent of the deposit. • Holes were generally drilled perpendicular (west) to the strike (north-south) of the stratigraphy, at angles ranging between 60° and 75°. • Closely spaced underground channel samples were used as part of the final block model validation process.
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• Samples have been collected since discovery in 2007 in accordance with Western Areas Ltd protocols and sample representivity is assured by an industry standard QAQC program as discussed in a later section of this tabular summary.
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	• Diamond drill (DD) core was marked at 1m intervals and sample lengths were typically of this length. Sampling boundaries were selected to match the main geological and mineralisation boundaries. • Core was cut in half by diamond saw blades and one half quartered, with a quarter stored for assay and a quarter preserved as a geological archive. • Samples were crushed, dried and pulverised (total prep) to produce a sub sample for analysis by 4 acid digest with an ICP/AES and FA/ICP (Au, Pt, Pd) finish. Samples from reverse circulation (RC) drilling consisted of chip samples at 1m intervals from which 3 kg was pulverised to produce a sub sample for assaying as per the DD samples.
Drilling Techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• Diamond drilling comprises NQ2 sized core. • The core was oriented using ACT II control panels and ACT III downhole units. • RC drilling comprises 140mm diameter face sampling hammer drilling. • Rotary air blast holes (RAB) were used to assist in geological domain analysis, but were not used for Mineral Resource Estimation purposes.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	• Diamond core and RC recoveries are logged and recorded in the database. • Overall recoveries are >95% and there are no core loss issues or significant sample recovery problems.
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*	• Diamond core is reconstructed into continuous runs on an angle iron cradle for orientation marking. • Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers. • RC samples were visually checked for recovery, moisture and contamination.
	• *Whether a relationship exists between sample recovery and grade and whether sample bias occurs*	• The resource grades are derived from high quality diamond core drilling with core recoveries in excess of 95%. • The massive sulphide style of mineralisation and the consistency of the mineralised intervals are considered to preclude any issue of sample bias due to material loss or gain.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	• Geological and geotechnical logging was carried out on all diamond drillholes for recovery, rock quality designation (RQD) and number of defects (per interval). • Information on structure type, dip, dip direction, alpha angle, beta angle, texture, shape, roughness and fill material is stored in the structure table of the database. • Sufficient data has been collected and verified to support the current Mineral Resource Estimate.

Criteria	JORC Code 2012 Explanation	Commentary
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc)*	• Logging of diamond core and RC samples recorded lithology, mineralogy, mineralisation, structural (DD only), weathering, colour and other features of the samples. • Core was photographed in both dry and wet form.
	• *The total length and percentage of the relevant intersections logged.*	• All drillholes were logged in full from the collar position to the end of the hole position.
Sub-sampling techniques and sampling preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• Core was cut in quarters (NQ2) on site using an Almonte automatic core saw. • All samples were collected from the same side of the core.
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• RC samples were collected using a riffle splitter. • All samples in the mineralised zones were dry.
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• The sample preparation of diamond core follows industry best practice in sample preparation involving oven drying, coarse crushing of the quarter core sample down to ~10mm, followed by pulverisation of the entire sample (total prep) using LM5 grinding mills to a grind size of 90% passing 75 micron. • The sample preparation for RC samples is identical, without the coarse crush stage.
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• WSA included field Ni standards ranging from 0.7% - 8.4% Ni that were routinely submitted with sample batches in order to independently monitor analytical performance. • Standards were fabricated and prepared by Gannet Holdings, Perth, using high-grade nickel sulphide ore sourced from the Silver Swan mine. • Standards were supplied in 55g sealed foil sachets.
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	• Field duplicates were taken on a 15% by volume basis. • Duplicate quarter samples were sent to a commercial independent certified lab.
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• The sample sizes are considered to be appropriate to correctly represent the sulphide mineralisation at Spotted Quoll based on the style of mineralisation, the thickness and consistency of the intersections, the sampling methodology and percent value assay ranges for the primary elements.
Quality of assay data laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• All samples used in the Mineral Resource Estimate were assayed by an independent certified commercial laboratory. • The laboratory used by WSA is experienced in the preparation and analysis of nickel-bearing ores. • Samples were dissolved using nitric, perchloric, hydrofluoric and hydrochloride acid digest to destroy silica. • Samples were analysed for Al(0.01%), As(5), Co(1), Cu(1), Fe(0.01%), Cr(1),Mg(0.01%),Ni(1), S(0.01%), Ti(0.01%) and Zn(1) using Method Me-ICP61 (detection limit in brackets, values in ppm unless stated). • All samples reporting > 1% Ni were re-assayed by the OG62 method.
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• No geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for Mineral Resource Estimate purposes.
	• *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	• Standards and blanks were routinely used to assess company QAQC (approx. 1 standard for every 12-15 samples). • Duplicates were taken on a 15% by volume basis, field based umpire samples were assessed on a regular basis. • Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots. • Results indicated no material issues associated with sample preparation and analytical error; in occasional cases where a sample did not meet the required quality threshold, the entire batch was re analysed.
Verification of sampling and	• *The verification of significant intersections by either independent or alternative*	• Newexco Services Pty Ltd (Newexco) has independently visually verified significant intersections in most of the diamond core.

Criteria	JORC Code 2012 Explanation	Commentary
assaying	*company personnel.*	
	• *The use of twinned holes.*	• No holes were specifically twinned, but there are several holes in close proximity to each other and the resultant assays and geological logs were compared for consistency.
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• Primary data was collected using Excel templates utilising look-up codes, on laptop computers. • All data was validated by the supervising geologist, and sent to Newexco for validation and integration into an SQL database.
	• *Discuss any adjustment to assay data.*	• No adjustments were made to assay data compiled for this estimate.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	• Hole collar locations were surveyed by WSA surveyors. The Leica GPS1200 used for all surface work has an accuracy of +/- 3cm.
	• *Specification of the grid system used.*	• A 2 point transformation is used to convert the data from MGA50 to Local Grid and vice versa
	• *Quality and adequacy of topographic control.*	• The accuracy of the pillars used in WSA's topographical control networks is within the Mines Regulations accuracy requirement of 1:5000 for control networks.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.*	• Drillholes were spaced at an approx. 30m (northing) x30m grid for the areas that will be affected by mining in the next two years and nominally 60m by 60m for areas that will be affected by mining in the subsequent years.
	• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*	• The previous estimate and the extensive drill program coupled with information derived from previous open pit and underground mining at Spotted Quoll has demonstrated sufficient and appropriate continuity for both geology and grade within the deposit to support the definition of Mineral Resources, and the classification (Indicated and Inferred) applied. No material has been classified as Measured.
	• *Whether sample compositing has been applied.*	• Samples were composited to 1m lengths, making adjustments to accommodate residual sample lengths.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	• The Spotted Quoll deposit strikes at approximately 030° and dips nominally 50° to the east. • All drilling was conducted from east to west. • Most of the drilling was conducted from the hanging wall i.e. from the east to the west. • Results from an independent structural study on the deposit along with historical regional and near-mine structural observations complemented the detailed structural core logging results to provide a geological model that was used with an appropriate level of confidence for the classification applied under the 2012 JORC Code.
	• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• No orientation based sampling bias has been observed in the data.
	• *The measures taken to ensure sample security.*	• All core samples were delivered from site to Perth and then to the assay laboratory by an independent transport contractor.
	• *Audits or Reviews*	• No formal external audit of the Mineral Resource has been undertaken to date. • Independent consultants assisted with the geological and mineral resource modelling.
	• *The results of any audits or reviews of sampling techniques and data.*	• The sampling techniques are standard practice at WSA; these were implemented over seven years ago and have been subject to independent reviews during this time.

Section 2: Reporting of Exploration Results – Spotted Quoll

(Criteria listed in Section 1, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• Forrestania Nickel Operations (FNO) comprises approximately 125 tenements covering some 900km^2 within the Central Yilgarn Province. The tenements include exploration licences, prospecting licences, general purpose leases, miscellaneous licences and mining leases. • Western Areas wholly owns 106 tenements, 55 tenements of which were acquired from Outokumpu in 2002 and a further 51 tenements acquired from Kagara in March 2012 (some which are subject to various third party royalty agreements). The remainder of the tenements are subject to Joint Ventures, 14 tenements are part of the Mt Gibb JV where Western Areas has the right to earn 70% interest from Great Western Exploration (currently at 51% WSA) and the Lake King JV where Western Areas has earned a 70% interest from Swanoak Holdings. • A number of the Kagara tenements are subject to third party royalty agreements. • All the tenements are in good standing. Six tenements are pending grant.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Western Areas has been exploring its wholly owned tenements since 2002. The tenements subject to the Kagara sale which took place in March 2012 were explored by Kagara since 2006 and LionOre and St Barbara prior to that time. • Western Areas has managed both the Mt Gibb JV since 2009 (Great Western Exploration explored the ground prior to that time) and the Lake King JV since 2007 (a small amount of work carried out by WMC prior to that date).
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The deposits lie within the Forrestania Greenstone Belt, which is part of the Southern Cross Province of the Yilgarn Craton in Western Australia. • The main deposit type is the komatiite hosted, disseminated to massive nickel sulphide deposits, which include the Flying Fox and Spotted Quoll deposits which are currently being mined. • The mineralisation occurs in association with the basal section of high MgO cumulate ultramafic rocks. • The greenstone succession in the district also hosts a number of orogenic lode gold deposits of which Bounty Gold Mine is the largest example. • Some exploration for this style of deposit is undertaken by Western Areas from time to time in the FNO tenements.
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* – *easting and northing of the drill hole collar* – *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* – *dip and azimuth of the hole* – *down hole length and interception depth* – *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• This is a Mineral Resource Estimate summary and no exploration results are reported as such.
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• This is a Mineral Resource Estimate summary and no exploration results are reported as such – cut-offs were applied to the overall reported tonnes and grade and are discussed in the appropriate section of this table. • No metal equivalent values are used.
Relationship between mineralisation widths and intercept	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*	• This is a Mineral Resource Estimate summary and no exploration results are reported. • The incident angles to mineralisation are considered moderate. • Due to the often steep dipping nature of the stratigraphy, reported down hole intersections are moderately greater (m/1.5 ratio on average) than the

Criteria	JORC Code explanation	Commentary
lengths	• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	true width.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• This is a Mineral Resource Estimate summary and the appropriate figures can be found elsewhere in this table.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• Not applicable to a Mineral Resource Estimate summary.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• This is a Mineral Resource Estimate summary and no exploration results are reported as such. • Multi-element analysis was conducted routinely on all samples for a base metal suite and potentially deleterious elements including Al, As, Co, Cr, Cu, Fe, Mg, Ni, S, Ti, Zn, Zr. All diamond core samples were measured for bulk density which range from 2.90 - 4.79g/cm^3 for values >0.5% Ni. • Geotechnical logging was carried out on all diamond drill holes for recovery, defects and RQD. • Information on structure type, dip, dip direction alpha and beta angles, texture, shape, roughness and fill material is stored in the structural logs in the database.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• This is a Mineral Resource Estimate summary and no exploration results are reported as such.

Section 3: Estimation and Reporting of Mineral Resources – Spotted Quoll

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database Integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	• All data has been recorded in Excel templates with reference look-up tables. All data are imported into an acQuire relational database.
	• *Data validation procedures used.*	• Validation is a fundamental part of the acQuire data model and is implemented via referential integrity and triggers. • Referential constraints ensure that, for example, Hole ID matches collar and downhole data. Triggers check criteria such as code validity, overlapping intervals, depth and date consistencies. • All fields of code data have associated look-up table references.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	• The Competent Person (Andre Wulfse) is an employee of Western Areas and has undertaken regular site visits since 2008.
	• *If no site visits have been undertaken indicate why this is the case.*	• Not applicable.
Geological interpretation	• *Confidence in (or conversely, the uncertainty) of the geological interpretation of the mineral deposit.*	• Confidence in the geological interpretation is high, due to the history of mining, the spacing of drilling and the understanding of similar deposits within the Forrestania Ultramafic Belt. • The deposit is located within the traditional footwall of the basal ultramafic metasediment contact, which was probably the original locus for sulphide deposition from an overlying pile of komatiite flows. Subsequent metamorphism, deformation and intrusion of granitoid sills has contributed to a complex setting, with mineralisation now occupying a possible shear zone within the footwall sediments, 15-20m (stratigraphical) beneath the basalt/ultramafic contact. • The deposit is principally a body of matrix magmatic sulphide mineralisation in which the original pentlandite and pyrrhotite assemblage has been overprinted by arsenic-bearing assemblages dominated by gersdorffite and minor nickeline. Sulphide abundances of 20% to 90% are common. • Mean nickel grades of ore intersections are in the order of 4% to 12% Ni.

Criteria	JORC Code explanation	Commentary
	• *Nature of the data used and of any assumptions made.*	• Lithogeochemistry and stratigraphic interpretation have been used to assist the identification of rock types.
	• *The effect, if any, of alternative interpretations on Mineral Resource estimation.*	• Alternative interpretations of the Mineral Resource were considered. In particular, the previous model and the grade control models were extensively validated against the current geological and resource model. • Alternative interpretations of mineralisation do not differ materially from the current interpretation. • WSA has successfully mined the deposit using a similarly derived geological and resource model which is subject to monthly mill-to-face grade and tonnage reconciliation.
	• *The use of geology in guiding and controlling Mineral Resource estimation.*	• The Mineral Resource Estimate is based upon a robust geological model discussed previously. • The hanging wall and footwall contacts of the various mineralised domains were modelled with a level of confidence commensurate with the resource classification category applied. • The extents of the geological model were constrained by drillhole intercepts and extrapolation of the geological contacts beyond the drill data was minimal for the Indicated category. • Granitoid intrusives were modelled and grades were accordingly diluted in these areas.
	• *The factors affecting continuity both of grade and geology.*	• Key factors affecting continuity relate to pervasive felsic intrusive units and faults. • The geological discontinuities have been modelled and the grade discontinuities have been accounted for in the estimation modelling.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	• The strike length of the Mineral Resource is nominally 300m on average, with a range of 25m to 520m, depending on depth below surface. The nominal mean dip length is 1500m. • The RL below the pre-existing pit is 1250mRL and the maximum depth of the Mineral Resource is 250mRL. The mean thickness of the mineralised zone is 3.1m, with a maximum thickness of 13.4m.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, method was chosen include a description of computer software and parameters used and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.*	• Hard boundary geologic domains were designed using Implicit and Explicit modelling techniques. • Grade and ancillary element estimation into the mineralised domains using Ordinary Kriging and Inverse Power Distance (IPD) was completed using Datamine™, and Supervisor software. • The methods were considered appropriate due to drill hole spacing and the nature of mineralisation. • Sample data was composited to 1m downhole lengths. • Intervals with no assays were treated as null values. • Top-cut investigations were completed and no top-cuts were applied on the basis of grade distribution and Coefficient of Variation. • Sample, wireframe and block model data were flagged using domain and weathering codes generated from 3D mineralised wireframes. • Extensive Exploratory Data Analysis (EDA) was carried out on the raw and composite data in order to understand the distribution in preparation for estimation and to validate the composite data against the raw data. • EDA included Histograms, Log Probability plots and Mean and Variance plots for each of the domains and sub domains. • Qualitative Kriging Neighbourhood Analysis was used to determine the optimum search neighbourhood parameters. Directional variography was performed for Ni and selected ancillary elements. • Nugget values are typical for the type of mineralisation (Ni = 20% - 40% of the total variance). Ranges of continuity for Ni vary from 20m to 60m in the direction of preferred orientation of mineralisation. • Estimation validation techniques included swathe plots of the grade of the composites vs the grade of the block model.
	• *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.*	• This MRE is an update of an MRE that was previously reported and was validated against the same.
	• *The assumptions made regarding recovery of by-products.*	• No assumptions were made about the recovery of by products in this estimate. • WSA currently does not have any offtake agreements in place for the sale of discrete by-products.

Criteria	JORC Code explanation	Commentary
	• *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).*	• Arsenic (As) is considered a deleterious element as it can have an adverse effect on the recovery of Ni if not properly managed during the blending process. • As was routinely assayed with Ni and was subsequently modelled and estimated into the block model using mutually exclusive domains to that of Ni. • Other non-grade elements were estimated into the block model.
	• *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.*	• The block model was constructed using a 2mE x 5mN x 5MRL parent size, with sub cells. All estimation was completed at the parent cell scale, thereby avoiding any potential geostatistical support issues. • The size of the search ellipse was based on the drillhole spacing and domain dimensions. Two search passes were used; the first was 150m x 120m x 50m in the X, Y and Z directions respectively. • The second pass used a search volume factor of 50% of the first pass. Drill spacing is 30m x 30m in areas that will be affected by mining in the next two years and 60m x 60m in subsequent areas.
	• *Any assumptions behind modelling of selective mining units.*	• No selectivity was built into the model on the basis that full extraction of the ore zone using longhole and airleg stoping is expected
	• *Any assumptions about correlation between variables.*	• No known correlation between variables other than the close correlation between Density and Ni grade.
	• *Description of how the geological interpretation was used to control the resource estimates.*	• The geological interpretation was developed using geological, structural and lithogeochemical elements. • The geological framework associated with extrusive komatiite-hosted deposits, and the structural elements observed at the local and wide scale, were used to determine and refine mineral domains. • The hanging wall and footwall contacts of mineralisation were used as hard boundaries during the estimation process and only blocks within the geological wireframe were informed with Ni grades.
	• *Discussion of basis for using or not using grade cutting or capping.*	• Geostatistical and visual investigation of the grade distribution negated the need for grade cutting or capping.
	• *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.*	• Validation of the block model included comparing the volume of resource wireframes to block model volumes. • It also involved comparing block model grades with drill hole grades by means of swathe plots showing easting, northing and elevation comparisons. • Estimation validation techniques included swathe plots of the grade of the composites vs the grade of the block model as shown below. • Visual grade validations using Datamine™, Supervisor and Leapfrog were undertaken. • The assumptions and methodologies used during this estimation are very similar to that of the previously reported Mineral Resource Estimate.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	• Tonnages were estimated on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	• The mineral envelope was determined using a nominal 0.4% Ni grade cut-off. • The Mineral Resource is reported at a 0.4% Ni cut-off for Measured and Indicated and 0% Ni for Inferred, which is a reasonable representation of the mineralised material prior to the application of economic and mining assumptions and an Ore Reserve cut-off. • The Spotted Quoll mineralisation tenor is relatively high compared to other komatiite-hosted deposits, and hence the use of a lower cut-off grade is appropriate.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining*	• The Spotted Quoll deposit is currently being mined primarily using longhole stoping methods with paste fill. • The mining method, which is unlikely to change, has been taken into account during the estimation process. • The Mineral Resource was depleted against mining.

Criteria	JORC Code explanation	Commentary
	assumptions made.	
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	• Ore from the Spotted Quoll deposit is currently being processed on site, where Nickel concentrate is produced using a three-stage crushing, ball mill, and flotation and thickener/ filtration system. • Arsenic rejection in the flotation circuit has been modelled based on current and historic operational performance.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	• All waste and process residue will be disposed of through the Cosmic Boy concentrator plant and its tailings dam. • All site activities will be undertaken in accordance with WSA's environmental policy.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*	• There is a strong correlation between Ni and bulk density at Forrestania and a robust Ni grade regression formula was used to estimate bulk density into the blocks.
	• *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.*	• Core at Spotted Quoll is generally void of vugs, voids and other defects. Rocks are from the amphibolite facies and faults have largely been annealed. Porosity is considered low.
	• *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	• The bulk density values were estimated into the block model using the same search parameters that were used to interpolate Ni within the geological domains.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.*	• The Spotted Quoll Mineral Resource is classified as Indicated and Inferred on the basis of drillhole spacing and Kriging efficiency. • Only blocks that are between existing ore drives are classified as Measured.
	• *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, and confidence in continuity of geology and metal values, quality, quantity and distribution of the data).*	• The definition of mineralised zones is based on a high level of geological understanding. • The model has been confirmed by infill drilling, supporting the original interpretations. • All relevant factors have been considered in this estimate .
	• *Whether the result appropriately reflects the Competent Person's view of the deposit.*	• The Mineral Resource Estimate appropriately reflects the view of the Competent Person who is a full-time employee of Western Areas and has been working on the deposits since 2008, both as a consultant and an employee.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	• No audit has been undertaken on the current MRE to date, but the model was designed with the assistance of independent consultants.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.*	• The geological and grade continuity of the Spotted Quoll deposit is well understood and the mineralisation wireframes used to build the block model have been designed using all available exploration and mining data. • Post-processing block model validation was extensively undertaken using geostatistical methods.
	• *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.*	• The Mineral Resource statement relates to local estimates of tonnes and grade.
	• *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	• The MRE was compared to the production grade control data. The upper section of the deposit has been mined by open pit methods and underground mining has been in place for over five years.

Section 4: Estimation and Reporting of Ore Reserves – Spotted Quoll

(Criteria listed in section 1 and 3, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• *Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.* • *Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.*	*Western Areas Ltd (WSA) undertook a review of the Spotted Quoll deposit (SQ) during Financial year 2018 after the completion of the new drilling campaign. The underlying Mineral Resource was issued in September 2018 Quarterly Report.* *The Mineral Resources estimate is inclusive of the Ore Reserves.*
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	*Spotted Quoll is an operating underground mine since 2010. The Competent Person carries out routine inspections of the mine-site and underground workings as part of his normal duties.* *WSA has established a fit-for-purpose data collection and record keeping system used by the technical staff to effectively manage the operation. This data is used in the present Ore Reserves estimation.* *Mine design and mining method is based primarily on the recommendations laid out in the updated Feasibility study and back analysis data from the current mining practice.*
Study status	• *The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.* • *The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.*	*WSA completed a SQ Feasibility Study in November 2010 as a continuation of the Spotted Quoll open pit (release 15th of December 2010). Underground mining commenced on the 2nd of May 2010 with firing the first portal face. The Feasibility Study is still valid and has been updated with the experience gained.* *The current Ore Reserve estimation is an update of a pre-existing reserve using the new Mineral Resource, updated modifying factors, mine performance KPI's and a revised commodity price estimate.*
Cut-off parameters	• *The basis of the cut-off grade(s) or quality parameters applied.*	*An Ore Reserve cut-off grade of 2% Ni was selected to obtain an Ore Reserve that fits the following criteria:* • *Minimum Head Grade fitting the Mill requirements.* • *Ore Reserve average grade equal or greater than Life of Mine breakeven grade.* • *Mean Arsenic concentration that enables production of a saleable concentrate* • *Positive LOM NPV*

Criteria	JORC Code explanation	Commentary
		• *Maximise steady state production* • *LOM Nickel price curve from USD5.50/lb @ FX0.775 to USD7.50/lb @ FX 0.75.* *Some of the key ore reserve assumptions are considered commercially sensitive, however as the mine has been in operation for some years the reserve cut off parameters are developed using historical operating performance and statistics. More details regarding cut off parameters are reported in the following sections.*
Mining factors or assumptions	• *The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* • *The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.* • *The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.* • *The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).* • *The mining dilution factors used.* • *The mining recovery factors used.* • *Any minimum mining widths used.* • *The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.* • *The infrastructure requirements of the selected mining methods.*	*The mining method used is predominantly longhole stoping with a top down sequence and paste filling of resultant voids.* *The mining model used 5DPlanner and EPS Codes (CAE software house). Mining factors have been selected using historical performance data of the deposit, particularly:* • *The Mineral Resource model used is in Datamine format. It combines the Resources models for Spotted Quoll mine and has been released in September 2018 Quarterly report.* • *The minimum mining width is 2.0 metre.* • *The average stable stope length is between 25 and 30 metres with a stope height between 7 and 15 metres. Other geotechnical parameters are contained in the current Ground Control Management Plan.* • *Stope Hanging Wall planned dilution is 0.50 metres and Foot Wall planned dilution is from 0.1 to 0.2 metres at 0.4 Ni%.* • *Stope Unplanned dilution (including hosting rock and paste dilution) is 0% at0 Ni%.* • *0% Ni grade is assigned to the material outside the block model.* • *Ore recoveries range from 98% in the stopes and 100% in the ore drives.* • *Pillar factor for unplanned pillars is 0%.* • *Production rates reflect current mining performances and practice.* • *Standard SG for dilution is 2.8t/m^3.* *No Inferred material has been utilised for the Ore Reserves estimation.* *Spotted Quoll is an operating mine with existing infrastructure and planned extensions included in the LOM plan.*
Metallurgical factors or assumptions	• *The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.* • *Whether the metallurgical process is well-tested technology or novel in nature.* • *The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.* • *Any assumptions or allowances made for deleterious elements.* • *The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.* • *For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?*	*The metallurgical factors used are from the existing Cosmic Boy Concentrator (CBC) using conventional nickel sulphide floatation techniques combined with historical operating performance data. These factors are considered commercially sensitive and may be made available on request.* *The metallurgical process is a well tested technology for Nickel Sulphides recovery with three stages of fragmentation with wet screening for size classification, one milling stage with cyclone size classification and two stages of flotation including Arsenic rejection. A small stream of the flotation feed is anticipated to be sent to the Hydrometallurgical section of the concentrator that uses the BioHeap® technology to improve the overall recovery.* *The resultant concentrate is sold into existing off-take contracts with BHP and Tsingshan.*
Environmental	• *The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of*	*Spotted Quoll open pit mine received final environmental approval in October 2009. Approvals were provided under both Western Australian legislation; principally being Parts IV and V of the Environmental Protection Act 1986 (EP Act) and the Mining Act 1978 (M Act) and Commonwealth legislation being the Environment Protection and Biodiversity Conservation Act 1999, (EPBC Act). Environmental approval has also been received, to mine Nickel sulphide*

Criteria	JORC Code explanation	Commentary
	approvals for process residue storage and waste dumps should be reported.	*ore from the underground extension of the Spotted Quoll open cut mine under Western Australian legislation being principally Parts IV and V of the EP Act and the M Act. No further approval was required from the Commonwealth for underground mining at Spotted Quoll.* *A list of Key State and Commonwealth approvals obtained for both the Spotted Quoll open pit and the underground operations may be made available by request.*
Infrastructure	• *The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.*	*Spotted Quoll is an operating mine with adequate infrastructure and planned future capital project extensions are included in the LOM plan.* *Spotted Quoll is supplied by Western Power 33kV overhead power-line from the Bounty switchyard 60km to the north of mine-site.* *Potable water is produced via RO plants located at CB concentrator and pumped via a pipeline to the mine-site. Process water is recycled from the mine dewatering network.* *Bulk material logistics is predominately via conventional truck haulage.* *Mine personnel reside at the nearby Cosmic Boy Village (529 rooms) and are predominately a FIFO (via CB airstrip) workforce with some minor DIDO.* *The mine-site is 80km to the east of the Hyden township and has two main gazetted gravel road accesses (east from Hyden and south from Varley)*
Costs	• *The derivation of, or assumptions made, regarding projected capital costs in the study.* • *The methodology used to estimate operating costs.* • *Allowances made for the content of deleterious elements.* • *The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products.* • *The source of exchange rates used in the study.* • *Derivation of transportation charges.* • *The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.* • *The allowances made for royalties payable, both Government and private.*	*Capital Underground Development costs are derived from the LOM plan based on existing contracts and historical performance and data.* *All other Capital costs are sourced as necessary via quotes from suppliers or technical studies.* *Mining, processing, administration, surface transport, concentrate logistics and state royalty costs are based on existing cost estimates.* *The nickel price and FX assumptions used were sourced from industry standard sources* *Nickel price from USD5.50/lb @ FX0.775 to USD7.50/lb @ FX 0.75.* *Net Smelter Return (NSR) factors were sourced from existing concentrate off-take contracts.*
Revenue factors	• *The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.* • *the derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.*	*These have been selected after consideration of historical commodity prices variations over time and the requirement for the Reserve to be robust to potentially volatile commodity price and foreign exchange conditions.* *The price setting mechanism for the sale of product subject to this report is traded openly on the London Metals Exchange ("LME").* *Potential penalties and net smelter revenue factors are included in the Smelter Return factor used. This factor is based on the historical data from previous FY's and is considered commercially sensitive by the company and may be made available on request.* *Two main selling contracts structures are currently used by Western Areas. One has copper as a co-product and the second doesn't have any co-product. Allowance for this selling parameter is included in the Smelter Return factor.*

Criteria	JORC Code explanation	Commentary
Market assessment	• *The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* • *A customer and competitor analysis along with the identification of likely market windows for the product.* • *Price and volume forecasts and the basis for these forecasts.* • *For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*	*The commodity subject to this report is traded openly on the London Metals Exchange ("LME").* *The Company has for many years maintained both long and short term off-take sales contracts with multiple customers, both locally and internationally.* *Existing contracts have been assessed for the sales volume assumptions.* *As the Company has been supplying multiple customers over a significant time period no acceptance testing has been assumed in the reserve development process.* *These contracts have fixed dates in which the contract itself is reviewed and/or expires. The assumption to extend these contracts and the current sold volumes to the end of LOM has been made in order to assess the Ore Reserve.* *Refer to the previous section for nickel price assumptions.*
Economic	• *The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.* • *NPV ranges and sensitivity to variations in the significant assumptions and inputs.*	*The Company has been operational for a significant period of time with contracts in place for ore mining, processing and concentrate haulage. Furthermore the operation, subject to this report, has an in-situ operating concentrator facility. As such the actual visible operating and contract rates (including rise and fall where appropriate) has been used in the NPV economic assessments. Figures are considered commercially sensitive by the company.* *The discount rate has been estimated as the weighted average cost of capital for the Company.*
Social	• *The status of agreements with key stakeholders and matters leading to social licence to operate.*	*All legal permits to mine Spotted Quoll have been obtained by Western areas following the paths described by the relevant laws with the participation of the local communities (see previous points).* *As a company policy (CDMS-000610-Social Responsibility Policy), the relations with the local communities and territories are a key part of operational management.*
Other	• *To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:* • *Any identified material naturally occurring risks.* • *The status of material legal agreements and marketing arrangements.* • *The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.*	*It is noted that mining operations are an inherently risky business in which to operate, no other risk factors apart from the normal risk components included in all the above points and assumptions have been identified.*
Classification	• *The basis for the classification of the Ore Reserves into varying confidence categories.* • *Whether the result appropriately reflects the Competent Person's view of the deposit.* • *The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).*	*Spotted Quoll has the following reserves at the 30 of September 2018:* • *Proved Ore Reserves: 35,700 at 4.0% for 1,440 Ni tonnes* • *Probable Ore Reserves: 1,612,300 ore tonnes at 4.0% Ni for 64,220 Nickel tonnes* *The ore reserve generated appropriately reflects the Competent Person's view of the deposit.*
Audits or reviews	• *The results of any audits or reviews of Ore Reserve estimates.*	*Audits/Reviews of the present report have not been done because of the high confidence in the data used and the constant performance of the operation. A review may be done by external request.*

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.* • *It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	*The confidence in the present evaluation is based on Spotted Quoll being a well established operating mine with a mature performance database.* *The present estimation, for the nature of the commodity mined, refers to global market conditions (see above points for the assumptions).* *As is normal in mining operations, the key points that can have a significant impact on the performance of the Spotted Quoll Mine are the market conditions in general, and the Nickel price and the currency exchange rates in particular. All the other parameters are derived from sound historical production data.*

JORC 2012 TABLE 1 – Cosmos Nickel Complex Exploration

Section 1: Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*	• *Exploration targets were tested and sampled from diamond drilling (DD) core, and holes were mostly drilled perpendicular to the strike (north-south) of the stratigraphy, at angles ranging between -55° and -85°. Owing to drill collar availability, two holes were drilled at oblique azimuths (up to 40°) to the orebody strike (WCD014 and WCD015).* • *Drill holes were located initially with hand held GPS and later surveyed by differential GPS. DD holes were used to obtain high quality samples that were fully oriented and logged for lithological, structural, geotechnical attributes. Each sample of diamond drill core submitted to ALS laboratories at Malaga, Perth was weighed to determine density by the weight in air, weight in water method. All sampling was conducted under WSA QAQC protocols which are in accordance with industry best practice.* • *Diamond drill core (NQ2) is 1/4 core sampled on geological intervals (0.2m - 1.5m) to achieve sample weights under 2kgs.* • *Samples were crushed, dried and pulverised (total prep) to produce a sub sample for analysis by 4 acid digest with an ICP/AES and FA/ICP (Au, Pt, Pd) finish.*
	• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*	• *All samples were prepared and assayed by independent commercial laboratories whose instruments are regularly calibrated* • *Geophysical survey QC parameters were reviewed by independent supervising geophysicists from Newexco Services Pty Ltd*
	• *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Diamond core is typically marked at 1m intervals* • *Sample intervals marked up by geologists based on geology.* • *Sampled mineralisation intervals are sent to a commercial laboratory for crushing and grinding before assaying.*
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Diamond Drilling utilized a UDR1200 rig* • *Diamond drilling comprises HQ and NQ2 sized core.* • *Historical data is derived from both surface and underground diamond drilling*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• *Diamond core recoveries have been logged and recorded in the database* • *Diamond core are logged and recorded in the database. Overall recoveries are >95% and there was no core loss issues or significant sample recovery problems. Core loss is noted where it occurs.* • *Diamond core was reconstructed into continuous runs on an angle iron cradle for orientation marking. Depths are checked against the depth given on the core blocks and rod counts are routinely carried out by the drillers.* • *RC recoveries are logged and recorded in the database and RC samples were visually checked for recovery, moisture and contamination. Drilling close to the lake shore for the Neptune drilling resulted in high water flows which reduced the sample size and loss of fines from the sample.* • *The drilling by diamond core method has high recoveries. The massive sulphide style of mineralisation and the consistency of the mineralised intervals are considered to preclude any issue of sample bias due to material loss or gain.* • *Drilling in the oxidised profile results in more incomplete core recoveries.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support*	• *All geological logging was carried out to a high standard using well established geology codes in LogChief software.*

Criteria	JORC Code explanation	Commentary
	appropriate Mineral Resource estimation, mining studies and metallurgical studies.	• *All logging recorded in a Panasonic Toughbook PC .*
	• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*	• *Core is photographed in both dry and wet form and logging is done in detail.*
	• *The total length and percentage of the relevant intersections logged.*	• *All diamond drill holes were logged and photographed in full. RC holes are logged in full.*
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.*	• *Diamond core is sampled as quarter core only; cut by the field crew on site by diamond saw.*
	• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*	• *RC samples were collected on the rig using cone splitters. Composite samples are collected via riffle splitting or spearing to generate a single sample of less than 3kg.*
	• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*	• *Sample preparation follows industry best practice involving oven drying, coarse crushing and pulverising.*
	• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*	• *The field crew prepares and inserts the QAQC certified reference materials into the relevant calico bags.* • *OREAS and Geostats standards have been selected based on their grade range and mineralogical properties, with approximately 12 different standards used.*
	• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	• *Standards and blanks are inserted approximately every 20 samples or at least one every hole for both diamond and RC drilling.*
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *All geological logging was carried out to a high standard using well established geology codes in LogChief software.*
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	• *All samples are assayed by independent certified commercial laboratories.* • *The laboratories used are experienced in the preparation and analysis of nickel sulphide ores.*
	• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	• *No Geophysical tools or handheld XRF instruments were used to determine any element concentrations that were subsequently used for MRE or exploration reporting purposes.*
	• *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *Certified reference materials are included in all batches dispatched at an approximate frequency of 1 per 25 samples, with a minimum of two per batch.* • *Field duplicates are inserted into submissions at an approximate frequency of 1 in 25, with placement determined by Nickel grade and homogeneity. Lab checks, both pulp and crush, are taken alternately by the lab at a frequency of 1 in 25.* • *Accuracy and precision were assessed using industry standard procedures such as control charts and scatter plots.* • *Evaluations of standards are completed on a monthly, quarterly and annual basis using QAQCR.*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.*	• *Geological interpretation using intersections peer viewed by prior company and WSA geologists.*
	• *The use of twinned holes.*	• *Not applicable*
	• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*	• *All primary geophysical data were recorded digitally and sent in electronic format to Newexco Services Pty Ltd for quality control and evaluation.* • *All geological logging was carried out to a high standard using well established geology codes in LogChief software.* • *All other data including assay results are imported via Datashed software.* • *Drillholes, sampling and assay data is stored in a SQL Server database located in a dedicated*

Criteria	JORC Code explanation	Commentary
		data center.
	• Discuss any adjustment to assay data.	• none
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.	• Downhole surveys completed using the Axis "Champ Gyro™" north seeking gyroscopic instrument on all resource definition and Exploration diamond holes. Exploration RC holes were surveyed down-hole using an Eastman single shot camera. Underground drill-hole collar locations verified via survey pickup.
	• Specification of the grid system used.	• MGA94 Zone 51 grid coordinate system is used. • A two point transformation is used to convert the data from AMG84_51 mine grid and vice versa.
	• Quality and adequacy of topographic control.	• The project area is flat and the topographic data density is adequate for MRE purposes • Collar positions were picked up by suitably qualified surface and underground surveyors
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• Drill hole spacing at Neptune is varied according to nature of target type. Where initial drilling was undertaken holes are nominally 250m to 400m apart. Where mineralisation is identified holes are spaced at an approx 100m to 200m spacing. • For other projects, drill spacing will vary based on the target being tested.
	• Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	• Samples are collected at 1m intervals (Diamond and Aircore) and 4m composites (RC)
	• Whether sample compositing has been applied.	• Sampling compositing has been applied to some of the RC sampling (2m to 4m). Where significant results are intersected, RC samples will be broken into 1m intervals.
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	• The majority of the drill holes are orientated to achieve intersection angles as close to perpendicular as possible. The steep dipping nature of the stratigraphy at some targets (70° to 80°) means this is not always achieved.
	• If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• No orientation based sampling bias has been observed in the data, intercepts are reported as downhole lengths.
Sample security	• The measures taken to ensure sample security.	• Standard West Australian mining industry sample security measures were observed.
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Adrian Black of Newexco Pty Ltd (a member of the AIG), an independent exploration company, has reviewed the data and sampling techniques employed by the Company.

Section 2: Reporting of Exploration Results – Cosmos Nickel Complex

(Criteria listed in Section 1, also apply to this section.)

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Mineral tenement and land tenure status</td><td>• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.
• The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</td><td>• Cosmos Nickel Complex comprises 26 tenements covering some 9,226Ha. The tenements include mining leases and miscellaneous licenses
• Western Areas wholly owns 23 tenements, which were acquired from Xstrata Nickel Australasia in October 2015. The remainder of the tenements (3) are subject to a Joint Venture with Alkane Resources NL, where Western Areas has earned 80.6% interest
• All tenements are in good standing</td></tr>
<tr><td>Exploration done by other parties</td><td>• Acknowledgment and appraisal of exploration by other parties.</td><td>• Historical nickel exploration has been completed by Glencore PLC, Xstrata Nickel Australasia and Jubliee Mines NL</td></tr>
<tr><td>Geology</td><td>• Deposit type, geological setting and style of mineralisation.</td><td>• The deposits form part of the Cosmos Nickel Complex, which lies within the Agnew-Wiluna Belt of the central Yilgarn Craton, Western Australia
• The deposit style is komatiite hosted, disseminated to massive nickel sulphides.
• The mineralisation typically occurs in association with the basal zone of high MgO cumulate ultramafic rocks.
• Many of the higher grade ore bodies in the Cosmos Nickel Complex also show varying degrees of remobilisation, and do not occur in a typical mineralisation profile</td></tr>
<tr><td>Drill hole Information</td><td>• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:
– easting and northing of the drill hole collar
– elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar
– dip and azimuth of the hole
– down hole length and interception depth
– hole length.
• If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</td><td>• Drill hole summary details supporting reported intersections from the Neptune Project are captured in the enclosed table.

<table><tr><th>HoleID</th><th>Easting</th><th>Northing</th><th>RL</th><th>EOH Depth (m)</th><th>Type</th><th>DIP</th><th>Azimuth</th><th>Comments</th></tr><tr><td>WCD014</td><td>261791</td><td>6938458</td><td>460</td><td>982.6</td><td>DDH</td><td>-55</td><td>232</td><td>Complete</td></tr><tr><td>WCD015</td><td>261791</td><td>6938458</td><td>460</td><td>990.5</td><td>DDH</td><td>-68.5</td><td>220</td><td>Complete</td></tr><tr><td>WCD016</td><td>261654</td><td>6938799</td><td>460</td><td>747.8</td><td>DDH</td><td>-68</td><td>268</td><td>Complete</td></tr><tr><td>WCD017</td><td>261619</td><td>6938826</td><td>460</td><td>834.9</td><td>DDH</td><td>-85.5</td><td>95</td><td>Complete</td></tr><tr><td>WCD018</td><td>261448</td><td>6939475</td><td>461</td><td>831.7</td><td>DDH</td><td>-82</td><td>265</td><td>Complete</td></tr><tr><td>WCD022</td><td>261786</td><td>6938457</td><td>460</td><td>912.62</td><td>DDH</td><td>-78.9</td><td>277</td><td>Complete</td></tr></table></td></tr>
<tr><td>Data aggregation methods</td><td>• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.
• Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.
• The assumptions used for any reporting of metal equivalent values should be clearly stated.</td><td>• Standard weighted averaging of drill hole intercepts were employed. No maximum or minimum grade truncations were used in the estimation.
• The reported assays have been length and bulk density weighted. A lower arbitrary 0.5% Ni cut-off is applied, with no top cut applied. High grade intercepts internal to broader zones of mineralisation are reported as included intervals.
• Metal equivalents have not been used</td></tr>
<tr><td>Relationship between mineralisation widths and intercept lengths</td><td>• These relationships are particularly important in the reporting of Exploration Results.
• If the geometry of the mineralisation with respect to the drill hole angle is</td><td>• Drill hole intersections may not be true widths</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	known, its nature should be reported. • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• *Included within report*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *All relevant assay results have been reported*
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• *Included within report* • *Geophysics* • *Information on structure type, dip, dip direction alpha and beta angles, texture, shape, roughness and fill material is stored in the structural logs in the database.*
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *Preliminary plans are included within the report* • *Future explorations programs may change depending on results and strategy*

JORC 2012 TABLE 1: – Western Gawler Joint Venture

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Comment
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• *Air-core (AC) drilling is used for sampling.* • *Each sample interval is split to approximately 3kg using a rig mounted rotary splitter.* • *Each sample is sent for analysis to ALS Global laboratories in Perth, Western Australia.* • *The sample is pulverised in the laboratory (total prep) to produce a sub sample for assaying.* • *All sampling was conducted using WSA QAQC sampling protocols which are in accordance with industry best practice.*
Drilling Techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• *Exploration targets are tested using AC drilling. Holes were typically drilled vertically.* • *A truck-mounted air-core rig is used with a 3 inch diameter face sampling hammer drilling or Air-Core bit.*
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias*	• *Drilling recoveries are digitally logged, recorded and captured within the project database.* • *Overall recoveries are >95% and there has been no significant loss of sample material due to ground or drilling issues.* • *Each individual sampleis visually checked for recovery, moisture and contamination.* • *The style of expected mineralisation and the consistency of the mineralised intervals are expected to preclude any issue of sample bias due to material loss or gain.*
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc)* • *The total length and percentage of the relevant intersections logged.*	• *Geological logging is recorded and validated in excel spreadsheets (Toughbook platform)* • *Drill chips are logged for lithology, mineralogy, mineralisation, weathering, fabric, grainsize, colour and other relevant features.* • *Geotechnical logging was not completed due to the nature of drill method.* • *All holes have been logged from the surface to the end of hole.* • *Petrology is used to verify the field geological logging.*
Sub-sampling techniques and sampling preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is*	• *The drill samples were collected every metre on the drill rig using a rotary splitter.* • *No composite samples are taken.* • *Field QC procedures involve the use of certified reference material as assay standards, along with blanks, duplicates and barren washes. The insertion rate of these averaged 1:20, with an increased rate in mineralised zones.* • *Field duplicates are conducted on approximately 1 in 25 drill intersections.* • *The sample sizes are considered to be appropriate to correctly represent the geological model based on: the style of mineralisation, the thickness and consistency of the expected intersections, the sampling methodology and percent*

Criteria	JORC Code Explanation	Comment
	representative of the in situ material collected, including for instance results for field duplicate/second-half sampling • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	*value assay ranges for the primary elements.*
Quality of assay data laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• *All samples are processed by ALS Minerals (Australian Laboratory Services P/L) in Perth, Western Australia* • *All drill samples are subjected to ICP-MS (ME-MS61r) analysis using nitric, perchloric, hydroflouric and hydrochloride acid digest.* • *All samples are also assayed for PGE's using PGM-ICP23* • *Standards and blanks are routinely used to assess company QAQC (approx 1 standard for every 25-50 samples).*
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• *Primary data was collected using validated excel spreadsheets, on Toughbook computers.* • *All data is validated by the supervising geologist, and sent to WSA Perth for further validation and integration into a Microsoft Access database.*
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• *Drill holes were located using hand held GPS.* • *Elevation data is captured with hand held GPS, and cross referenced with local topographical maps (DMP produced), SRTM data and recently captured DTM models (where covered by the Aeromagnetic Surveys – Thomson Aviation).* • *MGA94 Zone 53 grid coordinate system is used.*
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• *Drill holes are located and specifically planned according to target location and stratigraphic location.* • *Samples are collected every metre down hole.* • *Sample compositing has not yet been applied, but may do so depending on the assay information required.*
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• *The majority of the drill holes are drilled vertically which may reduce range of lithologies or cross section of stratigraphy sampled in areas that are steeply dipping.* • *Heritage and/or environmental constraints may prevent some ideal drilling solutions.* • *No orientation based sampling bias has been observed in the data, intercepts are reported as down-hole lengths.*
Sample Security	• *The measures taken to ensure sample security.*	• *All samples are captured and prepared for transport onsite under the supervision of WSA staff.* • *All samples are collected in sealed task specific containers (Bulka bags – plastic pallets) and delivered from site to Perth and then the assay laboratory via WSA staff.*
Audits and Reviews	• *The results of any audits or reviews of sampling techniques and data.*	• *Adrian Black of Newexco Pty Ltd (a member of the AIG), an independent exploration company, has reviewed the data and sampling techniques employed by WSA.*

Section 2: Reporting of Exploration Results – Western Gawler Joint Venture

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC 2012 Explanation	Comment
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.*	• *The Western Gawler Project comprises 6 exploration licenses covering some 4,448km2, of which 5 are held 100% WSA. (EL 6087(formerly EL 5077), EL6248 (formerlyEL 5199), EL6249 (formerly EL5200), EL5688 and EL5939)* • *A sixth license EL 5880 (formerly EL 4440) is operated under the Strandline Resources Ltd / Western Areas Ltd Farm-In and Joint Venture (JV) Agreement.*
Exploration done by other parties.	• *Acknowledgment and appraisal of exploration by other parties.*	• *The project area was originally explored by BHP Billiton as part of its extensive gold, titanium, Iron and nickel target generation work, and more recently by Gunson Resources Limited (Nickel), Equinox (Base Metals and Gold) and Iluka Resources Ltd (Mineral Sands). It is deemed that the previous exploration was of variable effectiveness.* • *The South Australian Government has performed widely spaced stratigraphic diamond drilling along a number of traverses in the tenure* • *The success rate of historical RC drilling is low, while the AC and Diamond drilling was effective.* • *Gravity, Magneto Tellurics and Airborne Electro-magnetics have been used in selective locations within the project area.* • *The historical geophysics is deemed to have been effective.*
Geology	• *Deposit type, geological setting and style of mineralisation.*	• *The Western Gawler Project lies within the Fowler Domain of western South Australia. The Fowler Domain is a Mesoproterozoic orogenic belt comprised of medium to high metamorphic grade basement lithologies and younger felsic, mafic and ultramafic intrusives.* • *Similarly aged terranes globally contain significant accumulations of nickel and copper sulphides.* • *Whilst not primary target types, the area may also be prospective for orogenic gold, IOCG and skarn related mineralisation.*
Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* • *easting and northing of the drill hole collar* • *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* • *dip and azimuth of the hole* • *down hole length and interception depth* • *hole length.* • *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	
Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high*	• *Where assays results have been reported, they represent a single sampling interval (1m). In this case, no compositing has been used.* • *No metal equivalents have been used.*

HOLEID	Easting	Northing	RL	EOH Depth (m)	Type	DIP	Azimuth	Comments
18WGAC353	236593	6508754	65	65	AC	-90	0	Complete
18WGAC354	236643	6508387	64	50	AC	-90	0	Complete

Criteria	*JORC 2012 Explanation*	Comment
	grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	• *Not applicable*
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• *Refer to Table for location coordinates relating to the reported elevated intervals.*
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *No significant material results to report.*
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• *Multi-element analysis was conducted routinely on all samples for a base metal and PGM suite and potentially deleterious elements.*
Further work	• *The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *Exploration within the Western Gawler Project is ongoing.* • *At this stage of the exploration program, the nature of the geological model is evolving. Details of further work and will be forthcoming as the project progresses.*