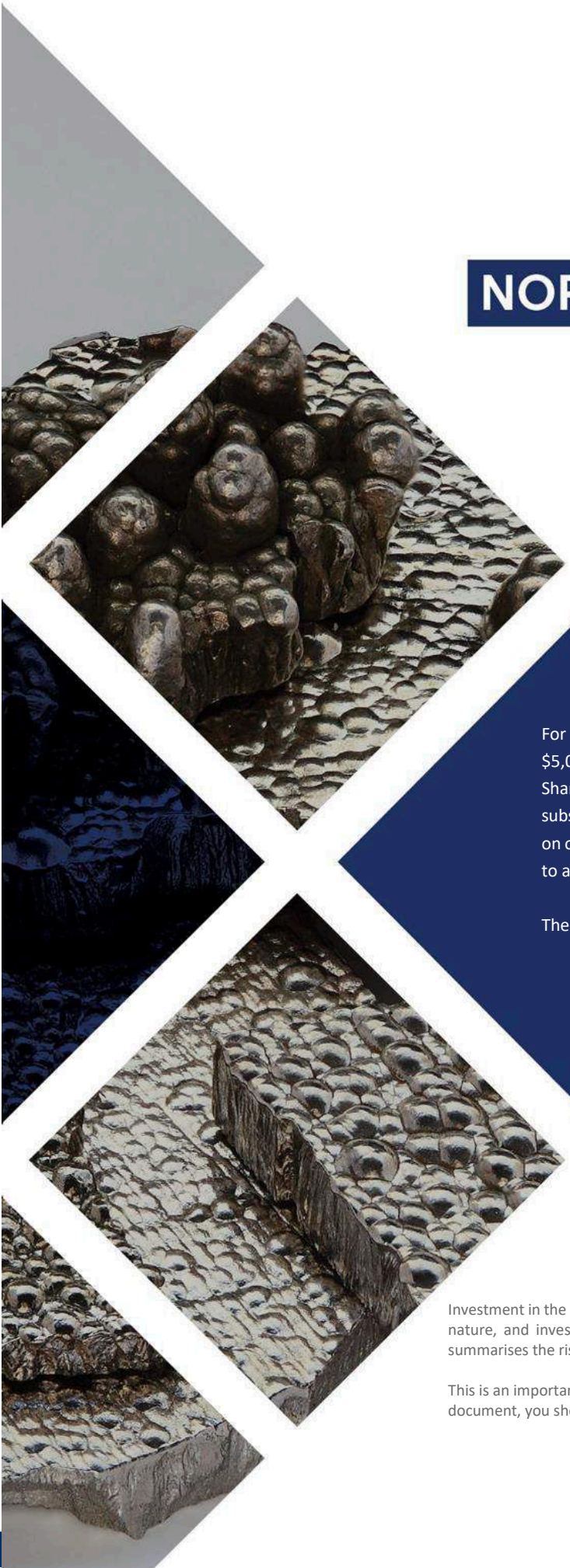
Northern Cobalt

NORTHERN COBALT LIMITED

ACN 617 789 732



PROSPECTUS

For an offer of 25,000,000 Shares at $0.20 per Share to raise a minimum of $5,000,000, with the right to accept oversubscriptions of up to a further 5,000,000 Shares at $0.20 per Share to raise up to a further $1,000,000. For every 2 Shares subscribed for and issued there will be 1 free Investor Option exercisable at $0.20 on or before the date which is 24 months from the date of issue. The Offer is subject to a Minimum Subscription requirement to raise at least $5,000,000. (Offer).

The Offer under this Prospectus is conditional on ASX listing of the Company.

Important notice

Investment in the Securities offered pursuant to this Prospectus should be regarded as highly speculative in nature, and investors should be aware that they may lose some or all of their investment. Section 6 summarises the risk factors associated with an investment in the Securities.

This is an important document that should be read in its entirety. If you do not understand anything in this document, you should consult your professional advisers without delay.

Lead Manager

PAC PARTNERS

Table of Contents

Corporate Directory

Directors

Mr Leonard (Len) Dean (Non-executive Chairman)
Mr Michael Schwarz (Managing Director)
Mr Andrew Shearer (Non-executive Director)
Mr Duncan Chessell (Non-executive Director)

Company Secretaries

Mr Jaroslaw (Jarek) Kopias (Joint Company Secretary)
Mr Jay Stephenson (Joint Company Secretary)

Proposed ASX Code

N27

Auditor

Grant Thornton
Level 3, 170 Frome Street
ADELAIDE SA 5000

Share Registry

Security Transfer Australia Pty Ltd
770 Canning Highway
APPLECROSS WA 6153
Telephone (within Australia): 1300 992 916
Telephone (outside Australia): +61 3 9628 2200

Solicitors

Edwards Mac Scovell Legal
Level 7, 140 St Georges Terrace
PERTH WA 6000

Independent Solicitors

All Mining Legal Pty Ltd
Suite 2, 257 York Street
SUBIACO WA 6008

Registered Office

Level 3, 29 King William Street
ADELAIDE SA 5000

Email: info@northerncobalt.com.au
Website: www.northerncobalt.com.au

Telephone: +61 8 8465 0700

Lead Manager

PAC Partners Pty Ltd
Level 10, 330 Collins Street
MELBOURNE VIC 3000

Telephone: +61 3 8633 9831

Investigating Accountant

Pendragon Capital Ltd
283 Rokeby Road
SUBIACO WA 6008

Independent Geologist

Ravensgate International Pty Ltd
8 Clive Street
WEST PERTH WA 6005

Independent Consultant

Ravensgate International Pty Ltd
8 Clive Street
WEST PERTH WA 6005

Important Notice

This Prospectus is dated 30 June 2017 and was lodged with ASIC on that date.

Neither ASIC nor ASX or their officers take any responsibility for the contents of this Prospectus or the merits of the investment to which this Prospectus relates.

No Securities may be allotted or issued on the basis of this Prospectus later than 13 months after the date of this Prospectus.

No person is authorised to give information or to make any representation in connection with this Prospectus, which is not contained in the Prospectus. Any information or representation not so contained may not be relied on as having been authorised by the Company in connection with this Prospectus.

It is important that you read this Prospectus in its entirety and seek professional advice where necessary. The Securities, the subject of this Prospectus, should be considered highly speculative.

Exposure Period

This Prospectus will be circulated during the Exposure Period. The purpose of the Exposure Period is to enable this Prospectus to be examined by market participants prior to the raising of funds. You should be aware that this examination may result in the identification of deficiencies in this Prospectus and, in those circumstances, any application that has been received may need to be dealt with in accordance with section 724 of the Corporations Act. Applications for Securities under this Prospectus will not be processed by the Company until after the expiry of the Exposure Period. No preference will be conferred on applications lodged prior to the expiry of the Exposure Period.

Conditional Offer

The Offer contained in this Prospectus is conditional on certain events occurring. If these events do not occur, the Offer will not proceed and investors will be refunded their application monies without interest. Please refer to Sections 2.1 and 8.1 for further details on the conditions attaching to the Offer.

No offer where offer would be illegal

The distribution of this Prospectus in jurisdictions outside Australia may be restricted by law and persons who come into possession of this Prospectus should seek advice on and observe any of these restrictions. Failure to comply with these restrictions may violate securities laws. Applicants who are resident in countries other than Australia should consult their professional advisers as to whether any governmental or other consents are required or whether any other formalities need to be considered and followed.

This Prospectus does not constitute an offer in any place in which, or to any person to whom, it would not be lawful to make such an offer. It is important that investors read this Prospectus in its entirety and seek professional advice where necessary.

No action has been taken to register or qualify the Securities or the Offer, or to otherwise permit a public offering of the Securities in any jurisdiction outside Australia. This Prospectus has been prepared for publication in Australia and may not be released or distributed in the United States of America.

Electronic Prospectus

A copy of this Prospectus can be downloaded from the website of the Company at www.northerncobalt.com.au. If you are accessing the electronic version of this Prospectus for the purpose of making an investment in the Company, you must be an Australian resident and must only access this Prospectus from within Australia.

The Corporations Act prohibits any person passing onto another person an Application Form unless it is attached to a hard copy of this Prospectus or it accompanies the complete and unaltered version of this Prospectus. You

may obtain a hard copy of this Prospectus free of charge by contacting the Company on +61 8 8465 0700 during ordinary office hours or by emailing the Company at info@northerncobalt.com.au.

The Company reserves the right not to accept an Application Form from a person if it has reason to believe that when that person was given access to the electronic Application Form, it was not provided together with the electronic Prospectus and any relevant supplementary or replacement prospectus or any of those documents were incomplete or altered.

Website

No document or information included on the Company's website is incorporated by reference into this Prospectus.

Forward-looking statements

This Prospectus contains forward-looking statements which are identified by words such as 'may', 'could', 'believes', 'estimates', 'targets', 'expects', or 'intends' and other similar words that involve risks and uncertainties.

These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that, as at the date of this Prospectus, are expected to take place.

Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and management.

The Company cannot and does not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this Prospectus will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements.

The Company has no intention to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this Prospectus, except where required by law.

These forward-looking statements are subject to various risk factors that could cause the actual results to differ materially from the results expressed or anticipated in these statements. These risk factors are set out in Section 6.

Photographs and Diagrams

Photographs used in this Prospectus which do not have descriptions are for illustration only and should not be interpreted to mean that any persons shown endorses this Prospectus or its contents or that the assets shown in them are owned by the Company. Diagrams used in this Prospectus are illustrative only and may not be drawn to scale. Unless otherwise stated, all data contained in charts, graphs and tables is based on information available at the date of this Prospectus.

Definitions

Terms used in this Prospectus are defined in the Defined Terms in Section 15.

Chairman's Letter

On behalf of the Board of Directors of Northern Cobalt Limited, I am pleased to present you with this Prospectus and the opportunity to become a new Shareholder. The Company has a clear strategy to focus on developing cobalt assets and considers its proposed acquisition of a defined cobalt Mineral Resource with additional exploration potential as a strategic advantage in this context. The Company has recognised the growing importance of cobalt sourced from developed world jurisdictions and the increased demand for energy storage driving the demand for cobalt.

Northern Cobalt is a newly-incorporated company targeting the acquisition, exploration and development of cobalt mineral projects. The Company is acquiring, upon IPO, the prospective Wollogorang Cobalt Project (**Project**) which includes the Stanton Cobalt Deposit, located in the north-eastern corner of the Northern Territory. The Project area lies 15 km west of the Queensland border and 70 km north of Wollogorang Station Homestead. The Company plans to drive shareholder value through the assessment and development of the cobalt potential of the Project. It is planned that, upon listing, 20,000m of drilling will be undertaken prior to the end of 2017. The aim of this proposed 230 hole drill program is to expand the existing cobalt Mineral Resources at the Stanton Cobalt Deposit and test a number of mineralised drill targets.

The Project, to be acquired by Northern Cobalt, consists of three tenements which are held by Mangrove Resources Pty Ltd (**Mangrove**). Coolabah Group Pty Ltd (**Coolabah**) holds 100% of the shares in Mangrove.

Pursuant to the Share Sale Agreement, the Company will issue 6,500,000 Shares and 14,500,000 Performance Shares to Coolabah. A summary of the Share Sale Agreement and other material agreements to the Acquisition are outlined in Section 8.

The Board is confident that the Project and team assembled has the ability to position Northern Cobalt to become a recognised cobalt company. Details of the Project are found in Section 4 and in the Independent Geologist's Report in Section 10 of this Prospectus.

The Company is led by an experienced and diverse board of directors and management team with long term experience in corporate finance, operational management, engineering and exploration project management. Their combined experience and commitment provide Northern Cobalt with the tools to target the growing cobalt and energy storage markets.

Under this Prospectus, the Company is seeking to raise a minimum of $5,000,000 with oversubscriptions of an extra $1,000,000 through the issue of 25,000,000 Shares to a maximum of 30,000,000 Shares at a price of $0.20 per Share to fund the exploration and potential advancement of the Project. In addition, for every 2 Shares subscribed for and issued there will be 1 free quoted Investor Option exercisable at $0.20 on or before the date which is 24 months from the date of issue. The Company will also apply for these Investor Options to be quoted on the ASX.

This Prospectus contains information about the Company, the Offer, the proposed Acquisition, and the Project. I commend the Company to you and encourage you to consider the Offer.

Investors should be aware of the potential risks inherent in this investment which are outlined in Section 6 of this Prospectus. Before making your decision to invest, I ask that you carefully read this Prospectus and seek professional advice if required.

Yours sincerely

Len Dean
Chairman

Offer Information

KEY DATES - Indicative timetable*

Task	Indicative Date
Lodgement of Prospectus with ASIC	30 June 2017
Opening Date	10 July 2017
Closing Date	7 August 2017
Despatch of holding statements	14 August 2017
Expected date for quotation on ASX	17 August 2017

* The above dates are indicative only and may change without notice. The Exposure Period may be extended by ASIC by not more than 7 days pursuant to section 727(3) of the Corporations Act. The Company reserves the right to extend the Closing Date or close the Offer early without prior notice. The Company also reserves the right not to proceed with the Offer at any time before the issue of Securities to Applicants.

KEY OFFER DETAILS

Description	Minimum Subscription	Maximum Subscription [1]
Offer price per Share	$0.20	$0.20
Shares on issue before the Offer	11,000,000	11,000,000
Vendor Shares	6,500,000	6,500,000
Shares to be issued under the Offer	25,000,000	30,000,000
Total number of Shares following the Offer	**42,500,000**	**47,500,000**
Founder Options on issue before Offer	6,000,000	6,000,000
Investor Options to be issued under Offer	12,500,000	15,000,000
Promoter Options to be issued outside the Offer[2]	6,500,000	6,500,000
Total number of Options following the Offer[3]	**25,000,000**	**27,500,000**
Performance Shares to be issued[4]	**17,500,000**	**17,500,000**
Gross proceeds of the Offer	$5,000,000	$6,000,000

Notes:

1. Maximum subscription assumes all oversubscriptions are accepted.
2. See Sections 3.7 and 8.3.
3. The total number of Options is made up of Founder Options, Investor Options and Promoter Options.
4. See Section 3.7.

This Section 1 is a summary only and not intended to provide full information for investors intending to apply for Securities offered pursuant to this Prospectus. This Prospectus should be read and considered in its entirety.

Item	Summary	Further Information
A. Company		
Who is the issuer of this Prospectus?	Northern Cobalt Limited (ACN 617 789 732)	Section 3
Who is the Company?	The Company was incorporated as a proprietary company limited by shares on 6 March 2017. The Company was converted to a public company limited by shares on 4 May 2017. The Company has entered into the Share Sale Agreement to acquire 100% of Mangrove from Coolabah as Mangrove holds the Tenements over the Project on certain terms and conditions.	Sections 3.1, 3.2 and 8.1
What is the Company's interest in the Project?	Upon completion of the Share Sale Agreement, the Company will hold a 100% interest in the Tenements and the Project through Mangrove, which at that time will be a wholly-owned subsidiary of the Company.	Sections 3.1 and 8.1
What is the Project?	The Wollogorang Cobalt Project covers an area of 1131 km^2 in the north-east of the Northern Territory. The Project is approximately 1000 km by road from Darwin and a similar distance from Cairns in Queensland. The McArthur River Mine is approximately 150 km to the west and the large mining service centre of Mount Isa lies 500 km to the southeast in Queensland. Other smaller service centres are Borroloola and Burketown, 150 km to the west and east respectively. The portfolio of Tenements in the Wollogorang Cobalt Project comprises: Exploration Licence 31272 (Running Creek, EL 31272), Exploration Licence 30590 (Selby, EL 30590) and Exploration Licence 30496 (Karns, EL 30496). All Tenements are 100% owned by Mangrove.	Sections 4 and 10

Item	Summary	Further Information
B. Business model		
What are the key business objectives of the Company?	The Company's key business objectives are to: (a) increase the global mineral resource inventory at the Wollogorang Cobalt Project; (b) work toward the possible upgrade of current resources in the Project from the Inferred to Indicated category according to the JORC Code and advance the Project by undertaking economic assessments; and (c) examine the possible acquisition of other projects.	Section 3.2
What is the business of the Company?	Post-Acquisition, the Company will be a cobalt exploration and development company with a focus on developing the Stanton Cobalt Deposit in the Wollogorang Cobalt Project in the Northern Territory. The Company's aim is to increase the available resources and to advance the project torward commercial production of cobalt.	Section 3.2
How does the Company generate income?	Post-Acquisition, the Company does not expect to generate any income in the short to medium term future as its primary business will be the exploration and advancement of the Wollogorang Cobalt Project.	Section 3.2
Why is the Company seeking admission to the Official List?	The Company is seeking admission to the Official List to: (a) fund part of the exploration and drilling program of the Wollogorang Cobalt Project; (b) provide general working capital for the Company, including operational and administration expenditure; and (c) gain exposure to a listed equity market.	Section 3.2(a)
C. Key advantages and key risks		
What are the key advantages of an investment in the Company?	The Directors are of the view that an investment in the Company provides the following non-exclusive list of advantages: (a) Exposure to the prospective Wollogorang Cobalt Project, post-Acquisition; and (b) the Company has a highly credentialed and experienced team to progress exploration and potential development of the Project.	Chairman's Letter and Sections 4 and 7
What are the key risks of an investment in the Company?	The business, assets and operations of the Company, following admission to the Official List, have the potential to influence the operating and financial performance of the Company in the future. These risks can impact on the value of an investment in the Securities.	Section 6

Item	Summary	Further Information
	The Board aims to manage these risks by carefully planning its activities and implementing risk control measures. Some of the risks are, however, highly unpredictable and the extent to which the Board can effectively manage them is limited. Based on the information available, the key risk factors affecting the Company are as follows: Newly Incorporated The Company was incorporated on 6 March 2017. Accordingly, it has no operating history and is in the process of establishing processes and procedures required to ensure compliance as a listed public company. An investment in the Company is therefore speculative. No assurance can be given that the Company will achieve commercial viability through the successful exploration of the Project. Until the Company can realise value from its projects, it is likely to incur ongoing operating losses. Conditionality of the Offer The obligation on the Company to issue the Shares and Investor Options under the Offer is conditional on certain matters, as set out in Sections 2.1 and 8.3. If the conditions are not satisfied, the Company will not proceed with the Offer. Failure to complete the Offer may have a material adverse effect on the Company's financial position. Exploration and Development Mineral exploration and development is a speculative and high-risk undertaking that may be impeded by circumstances and factors beyond the control of the Company. Success in this process involves, among other things: (a) discovery and proving-up, or acquiring, an economically recoverable resource or reserve; (b) access to adequate capital throughout the acquisition/discovery and project development phases; (c) securing and maintaining title to mineral exploration projects; (d) obtaining required development consents and approvals necessary for the acquisition, mineral	

Item	Summary	Further Information
	exploration, development and production phases; and (e) accessing the necessary experienced operational staff, the applicable financial management and recruiting skilled contractors, consultants and employees. As the Company, post-Acquisition, will be an early stage exploration company, there can be no assurance that exploration on the Project, or any other exploration properties that may be acquired in the future, will result in the discovery of an economic mineral resource. Even if an apparently viable mineral resource is identified, there is no guarantee that it can be economically exploited. Conditions to Tenements Interests in the tenements in Northern Territory are governed by legislation and are evidenced by the granting of leases and licences by the Northern Territory. The Company, post-Acquisition, will be subject to the Minerals Titles Act in the Northern Territory and the Company will have an obligation to meet conditions that apply to the Tenements, including the payment of rent and prescribed annual expenditure commitments. The Tenements in which the Company will acquire an interest (subject to Completion occurring) are subject to annual review and periodic renewal. While it is the Company's intention to satisfy the conditions that apply to the Tenements, there can be no guarantees made that, in the future, the Tenements that are subject to renewal will be renewed or that minimum expenditure and other conditions that apply to the Tenements will be satisfied. Renewal conditions may include increased expenditure and work commitments or compulsory relinquishment of areas of the Tenements comprising the Project. These events could have a materially adverse effect on the Company's prospects and the value of its assets. Native Title and Aboriginal Heritage Four native title determinations have been made with respect to areas that include the Tenements. The ability of the Company, subject to Completion occurring, to gain access to (by obtaining consent from the relevant landholder) and otherwise develop the Tenements may be affected.	

Item	Summary	Further Information
	Grant of Future Authorisation to Explore and Mine If the Company discovers an economically viable mineral deposit that it then intends to develop, it will, among other things, require various approvals, licences and permits before it will be able to mine the deposit. There is no guarantee that the Company will be able to obtain all required approvals, licences and permits. To the extent that required authorisations are not obtained or are delayed, the Company's operational and financial performance may be materially adversely affected. Future Funding The funds raised under the Offer are considered sufficient to meet the immediate objectives of the Company. Further funding may be required by the Company in the event costs exceed estimates or revenues do not meet estimates, to support its ongoing operations and implement its strategies. For example, funding may be needed undertake further exploration activities, or acquire complementary assets. Accordingly, the Company may need to engage in equity or debt financings to secure additional funds. Any additional equity financing may be dilutive to Shareholders, may be undertaken at lower prices than the Offer price or may involve restrictive covenants that limit the Company's operations be business strategy. There can be no assurance that such funding will be available on satisfactory terms or at all at the relevant time. Any inability to obtain sufficient financing for the Company's activities and future projects may result in the delay or cancellation of certain activities or projects, which would likely adversely affect the potential growth of the Company.	
D. Directors key management personnel and substantial holders		
Directors	The current Board is not anticipated to change upon listing, and shall be comprised of: (a) Mr Leonard (Len) Dean; (b) Mr Michael Schwarz; (c) Mr Andrew Shearer; and (d) Mr Duncan Chessell.	Section 7.1
Other key management personnel	The Company's Chief Financial Officer and Joint Company Secretary is Mr Jaroslaw (Jarek) Kopias.	Section 7.1

Item	Summary	Further Information
	As at the date of the Prospectus Mr Jay Stephenson is Joint Company Secretary with Mr Kopias. Following admission to Official Quotation, Mr Stephenson has indicated he intends to resign. Other than the Directors listed above and Messrs Kopias and Stephenson, the Company does not have any other key management personnel.	
What experience do the Directors and key management personnel have?	(a) Mr Dean has over 50 years' experience across various operational, marketing and management roles in the resources industry covering a number of jurisdictions; (b) Mr Schwarz has over 20 years' senior experience in mineral exploration spanning industry and government as a geologist and director of several exploration companies; (c) Mr Shearer is a qualified geoscientist who has been involved in the mining and finance industries for 23 years; (d) Mr Chessell is a geologist with over 20 years' experience in business and in oil, gas and mineral exploration; and (e) Mr Kopias is a Certified Practising Accountant and Chartered Secretary with over 20 years' industry experience in a wide range of financial and secretarial roles within the resources industry. The Company has also entered into a Consultancy Agreement with Coolabah with respect to exploration consulting, project management, geological services and business management services.	Sections 7.1 and 8.2
What are the Directors' interests in the Company?	Each Director's interest in the Company is as follows: (a) Mr Leonard (Len) Dean: 100,000 Shares and 1,000,000 Founder Options; (b) Mr Michael Schwarz: 200,000 Shares and 3,000,000 Founder Options; (c) Mr Andrew Shearer: 1,200,000 Shares, 450,000 Founder Options and 1,500,000 Performance Shares (*subject to Completion occurring*); and (d) Mr Duncan Chessell: 33,750 Shares, 697,500 Founder Options and 3,262,500 Performance Shares (*subject to Completion occurring*). Mr Chessell will be deemed to have a relevant interest in the 6,500,000 Shares to be issued by the Company to Coolabah Group Pty Ltd as consideration for the acquisition of 100% of Mangrove, due to Mr	Sections 7.2 and 13.7

Item	Summary	Further Information
	Chessell's current holding of 25% of the issued capital of Coolabah Group Pty Ltd.	
What benefits are to be paid to the Directors?	Each of Messrs Dean, Shearer and Chessell has entered into a non-executive Director appointment letter with the Company pursuant to which, upon the Company being admitted to the Official List, Mr Dean will be paid a director's fee of $60,000 per annum, and Messrs Shearer and Chessell will be each paid a director's fee of $35,000 per annum (all fees inclusive of superannuation). Mr Schwarz has entered into an Employment Agreement with the Company whereby he will be paid $192,720 per annum (inclusive of superannuation) upon the Company being admitted to the Official List.	Sections 7.2, 8.4 and 8.5
Are there any relationships between the Company and parties involved in the Acquisition or the Offer that are relevant to investors?	Duncan Chessell, a non-executive Director, is also a non-executive director and shareholder of Coolabah, the Vendor of the Project. Coolabah has entered into a Consultancy Agreement with the Company. Subject to Completion occurring, Mr Chessell is to receive 3,262,500 Performance Shares. Andrew Shearer, a non-executive Director, is Senior Resource Analyst at PAC Partners Pty Ltd, the Lead Manager. Subject to Completion occurring, Mr Shearer is to receive 1,500,000 Performance Shares.	Sections 3.3, 7.2 and 8.2
Who will be the substantial holders of the Company?	Coolabah Group Pty Ltd will hold 6,500,000 Shares. This represents 15.29% of the issued capital if the Minimum Subscription is raised and 13.68% of the issued capital if the Maximum Subscription is raised (on an undiluted basis). PAC Partners Pty Ltd will hold 2,400,000 Shares in the Company. This represents 5.65% of the issued capital if the Minimum Subscription is raised and 5.05% of the issued capital if the Maximum Subscription is raised (on an undiluted basis).	Section 3.9
E. Financial Information		
How has the Company performed over the past 12 months?	The Company was only recently incorporated (6 March 2017) and has no operating history and limited historical financial performance. As a result, the Company is not in a position to disclose any key financial ratios other than its statement of financial position, statement of changes in equity and pro-forma statement of financial position, and pro-forma statement of changes in equity which are set out in Section 12.	Section 3.1

Item	Summary	Further Information
What is the financial outlook for the Company?	Given the current status of the Project, which the Company will acquire subject to Completion occurring, and the speculative nature of mineral exploration, the Directors do not consider it appropriate to forecast future earnings. Any forecast or projection information would contain such a broad range of potential outcomes and possibilities that it is not possible to prepare a reliable best estimate forecast or projection on a reasonable basis.	Section 12
F. Offer		
What is being offered?	The Offer is an offer of 25,000,000 Shares at $0.20 per Share to raise a minimum of $5,000,000 (before costs). The Company may accept oversubscriptions for up to a further 5,000,000 Shares at $0.20 per Share to raise a further $1,000,000, being $6,000,000 in total. For every 2 Shares subscribed for and issued there will be 1 free Investor Option exercisable at $0.20 on or before the date which is 24 months from the date of issue. The Offer is not underwritten. The purpose of the Offer is to facilitate an application by the Company for admission of the Company to the Official List and to position the Company to seek to achieve the objectives stated at section B above. The Board believes that on completion of the Offer, the Company will have sufficient working capital to achieve its objectives.	Section 2
What will the Company's capital structure look like after completion of the Offer?	The Company's capital structure on a post-Offer basis is as follows: **Minimum Subscription** 42,500,000 Shares 25,000,000 Options 17,500,000 Performance Shares **Maximum Subscription** 47,500,000 Shares 27,500,000 Options 17,500,000 Performance Shares	Section 3.7

Item	Summary	Further Information
What are the terms of the Securities offered under the Offer?	A summary of the material rights and liabilities attaching to the Securities offered under the Offer is set out below: **Shares** The Shares offered are fully paid ordinary shares. **Investor Options** For every 2 Shares subscribed for and issued there will be 1 free Investor Option exercisable at $0.20 on or before the date which is 24 months from the date of issue.	Section 13.4
Will any of the Securities issued under the Offer be subject to escrow?	None of the Securities offered under the Offer will be subject to ASX-imposed escrow. Subject to the Company being admitted to the Official List, certain Shares and 6,000,000 Founder Options on issue prior to the Offer will be classified by ASX as restricted securities and will be required to be held in escrow for between 12 months from the date of issue of the securities and 24 months from the date of Official Quotation. This will also be the case for Shares issued to the Vendor as partial consideration for the Acquisition: (a) 6,500,000 Shares to be issued to the Vendor (or its nominees); (b) 14,500,000 Performance Shares to be issued to the Vendor (or its nominees) and 3,000,000 Performance Shares to be issued the Lead Manager (or its nominees); and (c) 6,500,000 Promoter Options to be issued to the Lead Manager (or its nominees). The Company will announce to ASX full details (quantity and duration) of the securities to be held in escrow prior to the Shares commencing trading on ASX.	Sections 2.7 and 6.15
Will the Securities issued under the Offer be quoted?	The Company will make an application to ASX for quotation of all Shares and the Investor Options to be issued under the Offer.	Section 2.7
What are the key dates of the Offer?	The key dates of the Offer are set out in the indicative timetable in the 'Offer Information' Section above.	Offer Information Section
What is the minimum investment size under the Offer?	The minimum investment size under the Offer is $2,000 and thereafter in multiples of $200.	Section2.6
Are there any conditions to the Offer?	The Offer is conditional on Completion occurring under the Share Sale Agreement. Completion (through exercise of the Mangrove Option) under the Share Sale	Sections 2.1 and 8.1

Item	Summary	Further Information
	Agreement is subject to satisfaction (or waiver) of various conditions precedent: (a) the Company obtaining a conditional admission letter from ASX on terms and conditions that are reasonably acceptable to the Company; (b) the Company's receipt of ASX approval of the terms of the Performance Shares for the purposes of ASX Listing Rule 6.1; (c) the parties obtaining all necessary consents and approvals (including shareholders' and regulatory or third party approvals) necessary to give effect to the sale and purchase of the Mangrove Shares; (d) the Company receiving valid applications for the Minimum Subscription under the Prospectus; (e) no breach of any Vendor warranty occurring before the earlier to occur of Completion and 31 December 2017; (f) no material adverse effect occurring with respect to Mangrove or the Tenements before the earlier to occur of Completion and 31 December 2017; (g) the Vendor, or its nominees, entering into such form of restriction agreements in respect of the Consideration Shares as is required by ASX; and (h) written confirmation in a form reasonably acceptable to the Company that the Vendor has forgiven the shareholder loan to Mangrove of $38,675.48.	
What consideration is payable by the Company for the Acquisition?	Pursuant to the Share Sale Agreement, the Company must issue, subject to Completion occurring, 6,500,000 Shares, 10,000,000 Class A Performance Shares and 4,500,000 Class B Performance Shares to the Vendor (or its nominees) for the Acquisition.	Section 8.1
G. Use of proceeds		
How will the proceeds of the Offer be used?	It is the Company's intention, post-Acquisition, to expand the current resource base in the Project, through exploration for cobalt mineralisation, to warrant commercial exploitation and development of the resource. Funds will be used to undertake mineral exploration activities involving geophysics, drilling	Section 2.4

Item	Summary	Further Information
	sampling and analysis. A component of the funds will be used to support mineral exploration and the operational and administrative activities and general working capital of the Company. Further details are set out in Section 2.4.	
H. Additional information		
Is there any brokerage, commission or stamp duty payable by applicants?	No brokerage, commission or duty is payable by Applicants on the acquisition of Securities under the Offer.	Sections 2.4, 2.11 and 2.12.
How do I apply for Shares under the Offer?	Application for Shares (and Investor Options) under the Offer can only be made using the Application Form accompanying this Prospectus. The Application Form must be completed in accordance with the instructions set out on the form.	Sections 2.6 and 2.8
What are the tax implications of investing in Securities?	The tax consequences of any investment in Shares will depend upon an investor's particular circumstances. Applicants should obtain their own tax advice prior to deciding whether to subscribe for Shares offered under this Prospectus.	Section 2.5
What are the corporate governance principles and policies of the Company?	To the extent applicable, considering the Company's size and nature, the Company has adopted the Recommendations. The Company's main corporate governance policies and practices as at the date of this Prospectus are outlined in Section 9. In addition, the Company's full Corporate Governance Plan is available from the Company's website (www.northerncobalt.com.au). Prior to listing on ASX, the Company will announce its main corporate governance policies and practices and the Company's compliance and departures from the Recommendations.	Section 9
Where can I find more information?	By: speaking to your stockbroker, solicitor, accountant or other independent professional adviser; (a) contacting the Share Registry on +61 3 9628 2200; (b) contacting the Company Secretary on +61 8 8465 0700: or (d) contacting the Lead Manager on +61 3 8633 9831.	

2.1 The Offer - Conditional

Pursuant to this Prospectus, the Company invites applications for 25,000,000 Shares at $0.20 per Share to raise a minimum of $5,000,000.

For every 2 Shares subscribed for and issued there will be 1 free Investor Option exercisable at $0.20 on or before the date which is 24 months from the date of issue.

The Shares offered under this Prospectus will rank equally with the existing Shares.

The Offer under this Prospectus is conditional on Completion occurring. The conditions to Completion, including the Minimum Subscription being raised and ASX granting conditional approval to admit the Company to the Official List on terms and conditions reasonably acceptable to the Company, are set out in Section 8.1.

If the conditions to Completion are not satisfied and Completion does not occur, the Offer will not proceed and the Company will repay all application monies received under the Offer, without interest, in accordance with the Corporations Act.

2.2 Oversubscriptions

The Company also reserves the right to accept oversubscriptions of up to a further 5,000,000 Shares at $0.20 per Share to raise up to a further $1,000,000. The maximum amount which may be raised under the Offer is accordingly $6,000,000 (**Maximum Subscription**).

2.3 Minimum Subscription

The minimum amount which must be raised under this Prospectus is $5,000,000 (**Minimum Subscription**). If the Minimum Subscription has not been raised within 4 months after the date of this Prospectus, the Company will not issue any Securities and will repay all application monies for the Securities within the time prescribed under the Corporations Act, without interest.

2.4 Use of Funds

The Company intends to apply funds raised from the Offer, together with existing cash reserves, over the first 2 years following admission of the Company to the Official List as follows:

Funds available	Minimum Subscription ($) ($5,000,000)	Percentage of Funds (%)	Maximum Subscription ($) ($6,000,000)	Percentage of Funds (%)
Existing cash reserves[1]	603,490	10.77	603,490	9.14
Funds raised from the Offer	5,000,000	89.23	6,000,000	90.86
Total	**5,603,490**	**100.00**	**6,603,490**	**100.00**
Allocation of funds[2]				
Lead Manager Fees	300,000	5.35	360,000	5.45
Expenses of the Offer	266,355	4.75	271,355	4.11
Exploration expenditure[3]	3,132,000	55.90	4,012,000	60.76
Corporate, overheads, remuneration and other management expenses	980,000[4]	17.49	980,000[4]	14.84
Plant and equipment	472,000	8.42	472,000	7.15

Working capital	100,000	1.78	100,000	1.51
Reserve	353,135	6.31	408,135	6.18
Total	**5,603,490**	**100.00**	**6,603,490**	**100.00**

Notes:

1. Refer to the Company's financial information set out in Section 11 for further details.
2. Refer to Section 13.9 for further details on the expenses of the Offer.
3. Estimated expenditure over the first 2 years following Official Quotation.
4. Annual expenses over the first 2 years following Official Quotation.

In the event the Company accepts oversubscriptions and raises more than the Minimum Subscription but less than the Maximum Subscription, the additional funds raised will be proportionately applied towards the allocation of funds under the Maximum Subscription column in the table in Section 2.4.

It should be noted that the Company's budgets will be subject to modification on an ongoing basis depending on the results obtained from exploration and evaluation work carried out. This will involve an ongoing assessment of the Company's mineral interests. The results obtained from exploration and evaluation programs may lead to increased or decreased levels of expenditure on certain projects reflecting a change in emphasis.

The above table is a statement of current intentions as of the date of this Prospectus. As with any budget, intervening events (including exploration success or failure) and new circumstances have the potential to affect the manner in which the funds are ultimately applied. The Board reserves the right to alter the way funds are applied on this basis.

The Directors consider that following completion of the Offer, the Company will have sufficient working capital to carry out its stated objectives. It should however be noted that an investment in the Company is speculative and investors are encouraged to read the risk factors outlined in Section 6.

2.5 Taxation

The taxation consequences of any investment in Securities will depend on your particular circumstances. It is your responsibility to make your own enquiries concerning the taxation consequences of an investment in the Company. If you are in doubt as to the course you should follow, you should seek your own professional advice.

To the maximum extent permitted by law, the Company, its officers and each of their respective advisors accept no liability and responsibility with respect to the taxation consequences of subscribing for Securities under this Prospectus.

No brokerage, commission or duty is payable by Applicants on the acquisition of Securities under the Offer.

2.6 Applications

Applications for Securities under the Offer must be made using the Application Form.

By completing an Application Form, each Applicant under the Offer will be taken to have declared that all details and statements made by you are complete and accurate and that you have personally received the Application Form together with a complete and unaltered copy of the Prospectus.

Applications for Shares must be for a minimum of 10,000 Shares and thereafter in multiples of 1,000 Shares and payment for the Shares must be made in full at $0.20 per Share.

Completed Application Forms and accompanying cheques, made payable to "Northern Cobalt Limited IPO Account" and crossed "Not Negotiable", must be mailed or delivered to the address set out on the Application Form by no later than 5:00 pm (WST) on the Closing Date, which is scheduled to occur on 7 August 2017.

Applications may be made online using the Share Registry website, www.securitytransfer.com.au and complete the online application form. All online applicants can **BPAY** their payments via internet or phone banking. A unique reference number will be quoted upon completion of the application.

BPAY applications will only be regarded as accepted if payment is received by the Share Registry from your financial institution on or prior to the Closing Date.

Applications do not need to be returned if payment has been made via **BPAY**.

The Company reserves the right to close the Offer early.

If you require assistance in completing an Application Form, please contact the Share Registry on +61 3 9628 2200.

2.7 Official Quotation

No later than 7 days after the date of this Prospectus, the Company will apply to the ASX for admission to the Official List and for the Shares and Investor Options to be granted Official Quotation by the ASX under the code "N27". The admission of the Company to the Official List and Official Quotation of the Shares and Investor Options is not to be taken in any way as an indication of the merits of the Company or the Securities offered for subscription under the Offer.

The ASX takes no responsibility for the contents of this Prospectus.

Normal settlement trading in Shares and Investor Options, if quotation is granted, will commence as soon as practicable after the issue of holding statements to successful Applicants.

It is the responsibility of Applicants to determine their allocation prior to trading in the Shares and Investor Options. Applicants who sell Shares and Investor Options before they receive confirmation of their allotment may contravene the ASX Listing Rules and do so at their own risk.

If permission for quotation of the Shares and Investor Options is not granted within three months after the date of this Prospectus, all application monies will be dealt with in accordance with the Corporations Act.

Subject to the Company being admitted to the Official List, certain Shares and 6,000,000 Founder Options on issue prior to the Offer will be classified by ASX as restricted securities and will be required to be held in escrow for up to 24 months from the date of Official Quotation. This will also be the case for the 17,500,000 Performance Shares and 6,500,000 Promoter Options to be issued outside the Offer, as set out in Section 3.7.

The Company will announce to ASX full details (quantity and duration) of the Shares required to be held in escrow prior to the Shares and Investor Options commencing trading on ASX.

2.8 Issue

Subject to the Completion occurring, including the Minimum Subscription being reached and ASX granting conditional approval for the Company to be admitted to the Official List, the issue of Securities offered by this Prospectus will take place as soon as practicable after the Closing Date.

Pending the issue of the Securities or payment of refunds pursuant to this Prospectus, all application monies will be held by the Company in trust for the Applicants in a separate bank account as required by the Corporations Act. The Company will be entitled to retain all interest that accrues on the bank account and each Applicant waives the right to claim interest.

The Directors will determine the recipients of the Shares and Investor Options in their sole discretion. The Directors reserve the right to reject any application or to allocate any Applicant fewer Securities than the number applied for. Where the number of Shares and Investor Options issued is less than the number applied for, or where no issue is made, surplus application monies will be refunded without any interest to the Applicant as soon as practicable after the Closing Date.

2.9 Applicants outside Australia

This Prospectus does not constitute a public offer or invitation in any jurisdiction other than Australia. No action has been taken to register or qualify the Securities or the Offer, or to otherwise permit a public offering of Securities in any jurisdiction outside Australia.

The distribution of this Prospectus in jurisdictions outside Australia may be restricted by law and persons who reside outside Australia and who come into possession of this Prospectus should seek advice on and observe any such restrictions. Any failure to comply with such restrictions may constitute a violation of applicable securities laws.

Any person who has a registered address in any other country who receives this Prospectus may only apply for Securities where that shareholder is able to reasonably demonstrate to the satisfaction of the Company that they may participate in the Offer relying on a relevant exception from, or are not otherwise subject to, the lodgement, filing, registration or other requirements of any applicable securities laws in the jurisdiction in which they have a registered address.

The Company will not offer to sell, nor solicit an offer to purchase, any securities in any jurisdiction where such offer, sale or solicitation may not lawfully be made. Any failure to comply with these restrictions may constitute violation of applicable securities laws.

If you are outside Australia it is your responsibility to obtain all necessary approvals for the issue of the Securities pursuant to this Prospectus. The return of a completed Application Form will be taken by the Company to constitute a representation and warranty by you that all relevant approvals have been obtained.

2.10 Not underwritten

The Offer is not underwritten.

2.11 Lead Manager

PAC Partners Pty Ltd (ABN 13 165 738 438) has been appointed as Lead Manager to the Offer. The terms of the Lead Manager Mandate are summarised in Section 8.3.

2.12 Commissions payable

PAC Partners Pty Ltd will be responsible for paying all commissions that PAC Partners Pty Ltd and the Company agree with any other licensed securities dealers or Australian financial services licensee out of the fees paid by the Company to PAC Partners Pty Ltd under the Lead Manager Mandate.

3.1 Background

The Company was incorporated as a proprietary company limited by shares on 6 March 2017 to acquire Mangrove and then proceed to explore and develop the Project.

On 4 May 2017, the Company converted to a public company limited by shares.

On 16 June 2017, the Company entered into the Share Sale Agreement with Coolabah and Mangrove pursuant to which, subject to satisfaction (or waiver) of certain conditions precedent, the Company will acquire 100% of Mangrove. Mangrove is the sole holder of the Tenements. A summary of the Share Sale Agreement is set out in Section 8.

As further set out in the Solicitor's Report on Tenements (Section 11) and the Independent Geologist's Report (Section 10), upon completion of the Share Sale Agreement, the project that the Company will have an interest in by virtue of its 100% shareholding in Mangrove will consist of the Tenements.

3.2 Business model

(a) Proposed exploration program and expenditure

It is the Company's intention, post-Acquisition, to expand the current resource base through exploration for cobalt mineralisation, to warrant commercial exploitation and development of the resource. Funds will be used to undertake mineral exploration activities involving geophysics, drilling sampling and analysis. A component of the funds will be used to support mineral exploration and the operational and administrative activities of the Company. Further details of the Company's intended exploration program are contained in the Independent Geologist's Report in Section 10.

The Company proposes to fund its exploration activities over the first 2 years as outlined in the table below.

Project program / expense item	Minimum Subscription		Maximum Subscription	
	Year 1	**Year 2**	**Year 1**	**Year 2**
Cash on hand prior to Offer	$603,490	N/A	$603,490	N/A
Capital raised under the Offer	$5,000,000	N/A	$6,000,000	N/A
Lead Manager fees	$300,000	N/A	$360,000	N/A
Expenses of offer	$266,355	N/A	$271,355	N/A
Exploration expenditure	$2,016,300	$1,115,700	$2,896,300	$1,115,700
Corporate, overheads, remuneration and other expenses	$491,500	$488,500	$491,500	$488,500
Plant and equipment	$388,000	$84,000	$388,000	$84,000
Working capital	$50,000	$50,000	$50,000	$50,000
Reserve	$176,567	$176,568	$204,067	$204,068
Total expenditure	**$3,688,722**	**$1,914,768**	**$4,661,222**	**$1,942,268**

The exploration programs and budgeted expenditure outlined above is subject to modification on an ongoing basis and is contingent on circumstances, results and other opportunities. Expenditure may be reallocated due to such changes or new opportunities arising and will always be prioritised in accordance with due regard to geological merit and other business decisions related to the Company's activities. Ongoing assessment of the Project may lead to increased or decreased levels of expenditure reflecting a change of emphasis.

(b) Competent person's statement

The information in this Prospectus that relates to Mineral Resources and Exploration Targets has been reviewed by Mr Alan Hawkins, Principal Consultant Geologist at Ravensgate, and is based on information compiled by Mr David Reid, Principal Resource Geologist at Ravensgate. Mr Hawkins and Mr Reid each have sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity to which they are undertaking to qualify as a Competent Person as defined in the JORC Code. Mr Hawkins and Mr Reid consent to the inclusion in this Prospectus of the matters based on their information in the form and context in which it appears.

The information in this Prospectus that relates to Technical Assessment of Mineral Assets reflects information compiled and conclusions derived by Mr Reid. Mr Reid has sufficient experience which is relevant to the Technical Assessment of the Mineral Assets under consideration and to the activity to which he is undertaking to qualify as a Specialist as defined in the VALMIN Code. Mr Reid consents to the inclusion in this Prospectus of the matters based on his information in the form and context in which it appears.

(c) **Strategy post listing**

The primary objective of the Company will be to focus on mineral exploration of resource opportunities that have the potential to deliver growth for Shareholders. To achieve this objective following listing, the Company proposes to undertake the exploration programs highlighted above and further explained in the Independent Geologist's Report in Section 10. The results of the exploration programs will determine the economic viability and possible timing for the commencement of further testing including pre-feasibility studies and commencement of any mining operations on the Project.

The Company's management strategy and purpose of this Offer is to work towards commercialising the Wollogorang Cobalt Project through exploration and potential development of cobalt mineralisation within the Tenements and to provide the Company with funding to:

(i) increase the global mineral resource inventory at the Wollogorang Cobalt Project;

(ii) work toward the possible upgrade of current resources in the Project from the Inferred to Indicated category according to the JORC Code and advance the Project by undertaking economic assessments;

(iii) examine the possible acquisition of other projects; and

(iv) provide working capital for the Company.

The Company has sufficient working capital to carry out its stated objectives for the 2 years following admission to the Official List. Further information regarding the Company's planned activities is set out in Independent Geologist's Report in Section 10.

3.3 Directors and key personnel

Leonard (Len) Dean – Non-executive Chairman
BSc Metallurgy, MAICD

Mr Dean has over 50 years' experience across various operational, marketing and management roles in the resources industry covering a number of jurisdictions.

Mr Dean has previously held senior roles with BHP Billiton including as Marketing Director Iron Ore and Group General Manager Minerals Marketing. Following his career at BHP Billiton, Mr Dean consulted to a number of companies providing marketing, commercial and technical services to the iron ore industry.

Mr Dean has held a number of board positions including Managing Director of Sesa Goa Ltd, Indian's largest publicly listed iron ore company, Non-Executive Director of WPG Resources Limited and Northern Cobalt Limited.

Mr Dean holds a Bachelor of Science in Metallurgy and is a member of the Australian Institute of Company Directors.

Michael Schwarz – Managing Director
BSc (Hons) Geology, AIG

Mr Schwarz has over 20 years' senior experience in mineral exploration spanning industry and government as a geologist and director of several exploration companies. Mr Schwarz has extensive experience both at a senior corporate level and in the hands-on roles of a geologist. He has high level negotiation and communication skills, and has managed competing stakeholder interests successfully, specifically balancing the needs of shareholders, land owners, corporate financiers, joint venture

partners and government to ensure a positive outcome for his organisations. Mr Schwarz has significant technical knowledge and experience in South Australian and Northern Territory geology and mineralisation styles and has led research projects with State Governments, Geoscience Australia and various universities.

As a founding Director and Executive Director Exploration for Core Exploration Limited (ASX:CXO), Mr Schwarz established exploration programs for iron-oxide copper-gold (IOCG) mineralisation in the Olympic Dam Copper-Gold Province in South Australia and in silver and base metal mineralisation in the Arunta Inlier in the Northern Territory.

As Managing Director of Monax Mining Ltd (ASX:MOX), Mr Schwarz was responsible for building a solid portfolio of highly prospective tenements with a focus on iron-oxide copper-gold and uranium. This strong foundation enabled the company to list on the ASX in 2005.

Mr Schwarz was also a founding Director of Marmota Energy Ltd (ASX:MEU), a role he performed concurrently while Managing Director of Monax Mining Ltd, where Mr Schwarz built a strong portfolio of prospective uranium tenements and successfully managed the company's oversubscribed listing on the ASX.

Duncan Chessell – Non-executive Director
BSc, GAICD, MAusIMM

Mr Chessell is a geologist with over 20 years' experience in business and in oil, gas and mineral exploration. He was Managing Director of Endeavour Group from 2010 to 2016 during which time he raised over $5,000,000 and made new gold discoveries at the Double Dutch, Minos and Ariadne prospects in the Gawler Craton in South Australia.

He is a Graduate of the Australian Institute of Company Directors and a Member of the Australian Institute of Mining & Metallurgy. He is currently part time CEO of the Himalayan Development Foundation Australia Inc, a not-for-profit entity delivering assistance to the people of Nepal of which he was the founding Chairman. He is currently a non-executive Director of Coolabah Group, the project Vendor. Coolabah Group advances mineral exploration projects towards development.

Mr Chessell also has 12 years' international business experience in adventure tourism, founding companies DCXP and PNG Expeditions in New Zealand, Australia and Papua New Guinea. He is also a triple Mt Everest summiter and leader of numerous adventures including 'world firsts' in Antarctica and has guided the "Seven Summits" – the highest peak on each continent.

Andrew Shearer – Non-executive Director
BSC (Geology), Hons (Geophysics), MBA.

Mr Shearer is an experienced geologist and has been involved in the mining and finance industries for 23 years. With a geoscientific and finance background he has experience in the resources industry from exploration through to development. As a Resources Analyst, Mr Shearer has been exposed to the global resources sector covering small to mid-cap resource stocks across a broad suite of commodities. Prior to moving into the finance sector he spent over a decade working in the minerals exploration industry in technical and senior management roles. Mr Shearer brings to Northern Cobalt strong professional skills and experiences in equity research, investor relations, valuations, supply and demand analysis and capital markets.

Mr Shearer's experience includes roles with PAC Partners Ptd Ltd, PhillipCapital, Austock, South Australian Government, Mount Isa Mines Limited and Glengarry Resources Limited. He is currently Senior Resource Analyst at PAC Partners Pty Ltd.

3.4 Other management personnel

Jarek Kopias – Chief Financial Officer and Joint Company Secretary
BCom, CPA, AGIA, ACIS

Mr Kopias is a Certified Practising Accountant and Chartered Secretary. Mr Kopias has over 20 years' industry experience in a wide range of financial and secretarial roles within the resources industry.

As an accountant, Mr Kopias worked in numerous financial roles for companies, specialising in the resource sector – including 5 years at WMC Resources Limited's Olympic Dam operations, 5 years at Newmont Mining Corporation - Australia's corporate office and 5 years at oil and gas producer and explorer, Stuart Petroleum Limited (prior to its merger with Senex Energy Limited).

He is currently the CFO and Company Secretary of Core Exploration Limited (ASX: CXO) and Lincoln Minerals Limited (ASX: LML) and Company Secretary of Iron Road Limited (ASX: IRD). Mr Kopias has held similar roles with other ASX entities in the past and has other business interests with numerous unlisted entities.

Jay Stephenson – Joint Company Secretary
MBA, FCPA, CPA, CMA, FGIA, FCIS, MAICD

Mr Stephenson has been involved in business development for over 25 years including approximately 21 years as Director, Chief Financial Officer and Company Secretary for various listed and unlisted entities in resources, IT, manufacturing, wine, hotels and property. He has been involved in business acquisitions, mergers, initial public offerings, capital raisings, business restructuring as well managing all areas of finance for companies.

Mr Stephenson holds a Master of Business Administration, is a Fellow of the Certified Practising Accountants (Australia), a Chartered Professional Accountant (Canada), a Certified Management Accountant (Canada), a Fellow of the Governance Institute of Australia and a Member of the Australian Institute of Company Directors.

3.5 Dividend policy

The Board anticipates that significant expenditure will be incurred in the evaluation and development of the Project. These activities, together with the possible acquisition of interests in other projects, are expected to dominate at least the first 2 year period following the date of this Prospectus. Accordingly, the Company does not expect to declare any dividends during that period.

Any future determination as to the payment of dividends by the Company will be at the discretion of the Directors and will depend on the availability of distributable earnings and the operating results and financial condition of the Company, future capital requirements and general business and other factors considered relevant by the Directors. No assurance in relation to the payment of dividends or franking credits attaching to dividends can be given by the Company.

3.6 Financial information

The Company was incorporated on 6 March 2017 and has no operating history and limited historical financial performance and has not generated any revenue.

As a result, the Company is not in a position to disclose any key financial ratios other than its statement of financial position, statement of changes in equity and pro-forma statement of financial position and changes in equity which are included in the Investigating Accountant's Report set out in Section 12.

3.7 Capital structure

The capital structure of the Company following completion of the Offer is summarised below. The Investigating Accountant's Report (Section 12) provides further details.

Shares[1]

Description	Number (Minimum Subscription)	Number (Maximum Subscription)
Shares on issue before the Offer[2]	11,000,000	11,000,000
Shares to be issued pursuant to the Share Sale Agreement[3]	6,500,000	6,500,000
Shares to be issued pursuant to the Offer	25,000,000	30,000,000
Total Shares on completion of the Offer	**42,500,000**	**47,500,000**

Notes:

1. The rights attaching to the Shares are summarised in Section 13.3.
2. Details of the Shares on issue before the Offer are provided in Section 3.8.
3. These Shares will be issued to the Vendor and its related parties pursuant to the Share Sale Agreement as part of the consideration for the Company's acquisition of 100% of Mangrove.

Options[1]

Description	Number (Minimum Subscription)	Number (Maximum Subscription)
Founder Options on issue before the Offer	6,000,000	6,000,000
Investor Options to be issued pursuant to the Offer	12,500,000	15,000,000
Promoter Options to be issued pursuant to the Lead Manager Mandate[2]	6,500,000	6,500,000
Total Options on completion of the Offer	**25,000,000**	**27,500,000**

Notes:

1. The terms and condition of, and rights attaching to, all classes of Options are summarised in Section 13.4.
2. Further detailed in Section 8.3.

Performance Shares[1]

Description	Number (Minimum Subscription)	Number (Maximum Subscription)
Performance Shares on issue before the Offer	Nil	Nil
Class A Performance Shares to be issued outside the Offer[2]	12,000,000	12,000,000
Class B Performance Shares to be issued outside the Offer[3]	5,500,000	5,500,000
Total Performance Shares on completion of the Offer	**17,500,000**	**17,500,000**

Notes:

1. The terms and condition of, and performance hurdles applicable to, all classes of Performance Shares are summarised in Section 13.5.
2. 10,000,000 Class A Performance Shares are to be issued to the Vendor and its related parties pursuant to the Share Sale Agreement and 2,000,000 Class A Performance Shares are to be issued to the Lead Manager or its nominees pursuant to the Lead Manager Mandate.
3. 4,500,000 Class B Performance Shares are to be issued to the Vendor and its related parties pursuant to the Share Sale Agreement and 1,000,000 Class B Performance Shares are to be issued to the Lead Manager or its nominees pursuant to the Lead Manager Mandate.

3.8 Shares currently on issue

The Shares currently on issue (before the Offer) comprise:

(a) 4,850,000 Shares issued since incorporation to founders, Directors or related parties of the Company;

(b) 150,000 Shares issued to related parties of the Vendor; and

(c) 6,000,000 Shares issued under a seed capital raising. The Shares issued under the seed capital raising were issued on 31 March 2017 at an issue price of $0.10 each to seed capital investors to raise $600,000 (before costs) and to fund listing costs and initial working capital requirements of the Company. These Shares were issued at a discount to the issue price of the Shares offered pursuant to the Offer to reflect the increased risk associated with an investment in the Company at the time of issue of the seed capital.

3.9 Substantial Shareholders

Those Shareholders holding 5% or more of the Shares on issue both as at the date of this Prospectus and on completion of the Offer (assuming Minimum Subscription and Maximum Subscription) are set out in the respective tables below.

(a) As at the date of the Prospectus

Shareholder	Shares	Options	Performance Shares	% (undiluted)	% (fully diluted)[2]
PAC Partners Pty Ltd	2,400,000	-	-	21.82	14.12
Valas Investments Pty Ltd[1]	1,200,000	450,000	-	10.91	7.06

Note 1: Valas Investments Pty Ltd is a Company controlled by Mr Andrew Shearer.

On completion of the Offer with Minimum Subscription (assuming no existing substantial Shareholder subscribes and receives additional Shares pursuant to the Offer)

Shareholder	Shares	Options	Performance Shares[1]	% (undiluted)	% (fully diluted)[1]
Coolabah Group Pty Ltd[2]	6,500,000	-	10,000,000 Class A 4,500,000 Class B	15.29	7.65
PAC Partners Pty Ltd	2,400,000	-	2,000,000 Class A 1,000,000 Class B	5.65	2.82

Note 1: The number of Performance Shares are not taken into account for the holdings of Coolabah and PAC Partners on dilution because they will be distributed to nominees.

Note 2: Mr Duncan Chessell will be deemed to have a relevant interest in the 6,500,000 Shares to be issued by the Company to Coolabah Group Pty Ltd as consideration for the acquisition of 100% of Mangrove, due to Mr Chessell's holding of 25% of the issued capital of Coolabah Group Pty Ltd.

(b) On completion of the Offer with Maximum Subscription (assuming no existing substantial Shareholder subscribes and receives additional Shares pursuant to the Offer)

Shareholder	Shares	Options	Performance Shares	% (undiluted)	% (fully diluted)[1]
Coolabah Group Pty Ltd[2]	6,500,000	-	10,000,000 Class A 4,500,000 Class B	13.68	7.03
PAC Partners Pty Ltd	2,400,000	-	2,000,000 Class A 1,000,000 Class B	5.05	2.59

Note 1: The number of Performance Shares are not taken into account for the holdings of Coolabah and PAC Partners on dilution because they will be distributed to nominees.

Note 2: Mr Duncan Chessell will be deemed to have a relevant interest in the 6,500,000 Shares to be issued by the Company to Coolabah Group Pty Ltd as consideration for the acquisition of 100% of Mangrove, due to Mr Chessell's holding of 25% of the issued capital of Coolabah Group Pty Ltd.

The Company will announce to ASX details of its top 20 Shareholders (following completion of the Offer) prior to the Securities commencing trading on ASX.

Wollogorang Cobalt Project

4.1 Location

The Wollogorang Cobalt covers 1131.44 km^2 located on pastoral land, wholly within NT pastoral lease No 1113, Wollogorang Station, in the north-eastern corner of the Northern Territory. The Project area is most readily accessible from the Wollogorang Station Roadhouse 70 km to the south and via the population centre of Borroloola 180 km to the north-west. The capital city of Darwin is 870 km to the north-west and the McArthur River Mine is approximately 150 km to the west-northwest. Access to the area is via all-weather gravel roads and station tracks. Beyond this, access within the Tenements is via partially rehabilitated station and exploration tracks. The area is seasonally inaccessible due to rain and wet ground, with work possible in the dry season between the start of June and the end of October in most years.

Figure 4.1. Regional location map showing population centres and Project location (Source: Google Earth 21/6/2017)

4.2 Climate and Regional Geology

The Project is semi-remote, lying on the coastal plain of the Gulf of Carpentaria approximately 35 km from the coast. The climate is tropical, cool in mid-year and hot and dry in summer, with annual rainfall between 800 and 1200mm falling mostly between December and March. There is a pronounced wet season over the summer months which restricts exploration access. The project area is characterised by the Gulf Plains bioregion which consists of gently undulating coastal plains along the southern Gulf of Carpentaria with scattered rugged areas of Proterozoic sandstones. The Wollogorang Cobalt Project area is restricted to scrubby plains with relatively low biodiversity. Soils are predominantly sandy red earths and shallow gravelly sands. Open eucalyptus woodlands with grassy understory dominates the region.

The Wollogorang Cobalt Project occurs on the "Wearyan Shelf" of the Proterozoic to Mesoproterozoic McArthur Basin, a 5km to 12km thick unmetamorphosed sedimentary succession containing dolostone, sandstone and shale units with minor felsic and mafic volcanics. The McArthur Basin unconformably overlies various Palaeoproterozoic terrains, such as the Pine Creek Orogen, and is host to mineral deposits such as the McArthur River (HYC) zinc-silver-lead mine. The main geological units of interest in the Project area (Figure 4.2) are the Wollogorang Formation (carbonaceous shales, sandstone and dolostone) and Gold Creek Volcanics (interlayered basalt lavas and sediments). In the west, these formations are overlain by the flat-lying 250m-thick Pungalina Member-Echo Sandstone couplet and, in turn, by the Karns Dolomite.

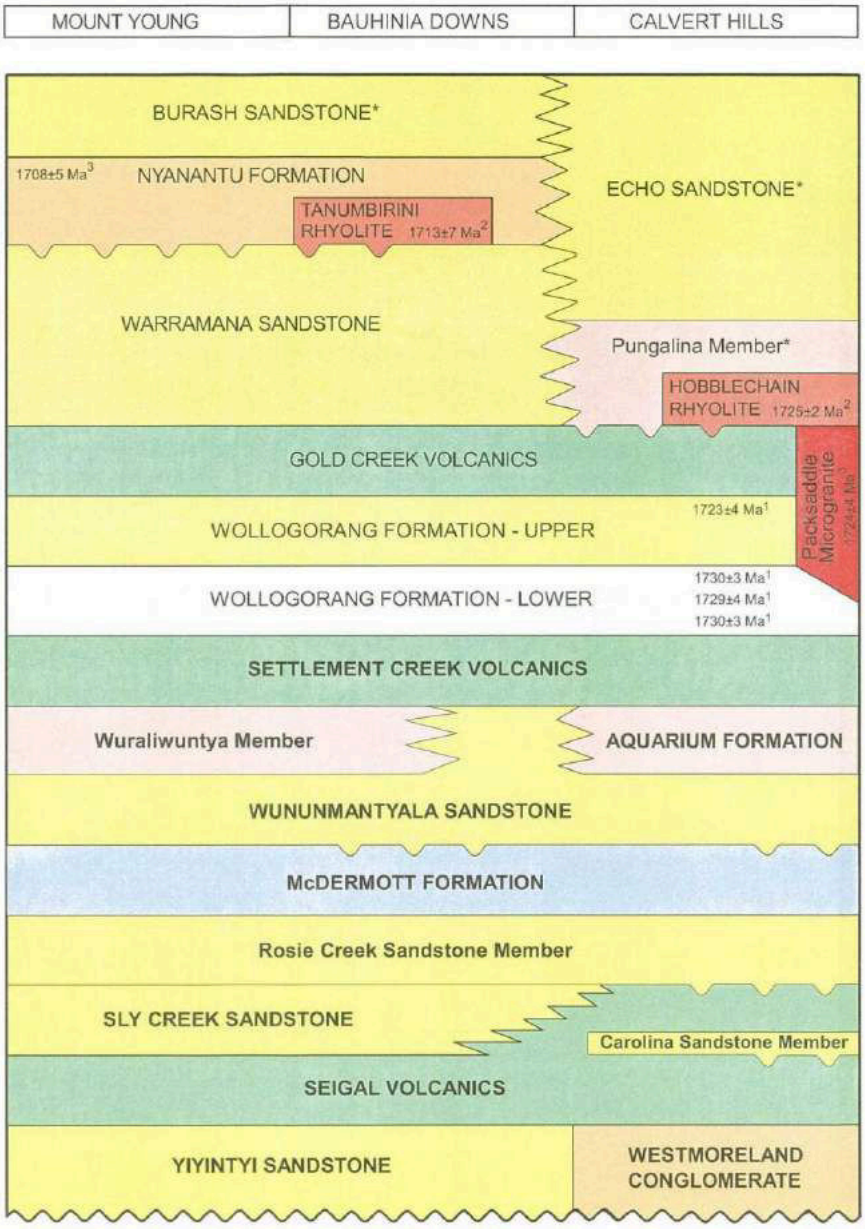


Figure 4.2. Stratigraphic section showing geological units of interest (Source: Rawlings, 2002)

4.3 The Wollogorang Cobalt Project – Historic Exploration

The Wollogorang Cobalt Project consists of the Stanton-Running Creek Co-Cu-Ni prospects and Stanton Cobalt Deposit, which occur within Mangrove's EL31272. From the period 1987 to 1996, W.J. Fisher and CRA Exploration Pty Ltd identified about 10 individual breccia pipes, up to 100m diameter, in a "cluster".

PROSPECT/ LOCALITY	AMG EAST	AMG NORTH	EL	UNIT	COMMODITIES	MINERALS	DESCRIPTION	REFERENCES
Arch Angel	794700	8148300	EL31272	Ptg	Cu	chalcopyrite	Sediment and breccia hosted ('breccia pipe')	Fisher (1989, 1991a), Palmer (1992, 1993b)
Felix	794800	8146300	EL31272	Ptg	Cu	chalcopyrite	Sediment and breccia hosted ('breccia pipe')	Palmer (1991a, 1995), Palmer *et al* (1995)
Stout	796000	8151500	EL31272	Ptg	Cu	chalcopyrite	Manganiferous debris flow breccia	Rawlings *et al* (1996), Rawlings (2006)
Running Creek	795500	8148900	EL31272	Ptg	Cu	chalcopyrite	Sediment and breccia hosted ('breccia pipe')	Battey (1958), Campe and Gausden (1970), Shannon (1971), Fisher (1977, 1980, 1989, 1991b), Palmer (1991a, 1994, 1995), Palmer et al (1995)
Saltlick	793500	8146700	EL31272	Ptg	Cu	chalcopyrite	Sediment and breccia hosted ('breccia pipe')	Palmer (1991a), Palmer et al (1995)
Stanton	793700	8148500	EL31272	Ptg	Co+Ni+Cu±Au	siegenite, chalcopyrite	Sediment and breccia hosted ('breccia pipe')	Fisher (1989), Palmer (1992, 1993a, b), Palmer et al (1995), Morris et al (1996), Rawlings et al (1996)
Selby (West)	784100	8134900	EL30590	Pk	P±Cu+U+REE	apatite	Stratiform sedimentary, hosted in granular sandstone and stromatolites	Davies (1982), Cardno (1983), Girschik (1992), NTGS (pers obs 2000)
Selby (Ridge)	785000	8134600	EL30590	Pk	P±Cu+U+REE	apatite	Stratiform sedimentary, hosted in granular sandstone and stromatolites	Davies (1982), Cardno (1983), Girschik (1992), NTGS (pers obs 2000)
Selby (Camp)	785500	8134800	EL30590	Pk	P±Cu+U+REE	apatite	Stratiform sedimentary, hosted in granular sandstone and stromatolites	Davies (1982), Cardno (1983), Girschik (1992), NTGS (pers obs 2000)

PROSPECT/ LOCALITY	AMG EAST	AMG NORTH	EL	UNIT	COMMODITIES	MINERALS	DESCRIPTION	REFERENCES
Selby (East)	788200	8134400	EL30590	Pk	P±Cu+U+REE	apatite	Stratiform sedimentary, hosted in granular sandstone and stromatolites	Davies (1982), Cardno (1983), Girschik (1992), NTGS (pers obs 2000)

Table 4.1. Mineral prospects and occurrences in the Wollogorang Project. GDA94 datum. Key to abbreviations: Ptg = Gold Creek Volcanics, Pk = Karns Dolomite (Modified after Rawlings, 2006)

The first mineralisation was discovered in the area by Mt Isa Mines Limited who mined secondary copper from a small open pit in the 1930's. Other companies explored in the region for various commodities, including uranium and diamonds, but it was not until the late 1980s that W.J. Fisher, a consultant geologist, identified breccia pipes in the region. CRA Exploration Pty Ltd (**CRA**) joint ventured into the Project between 1990 and 1996 undertaking an extensive amount of exploration including 21,468m in 257 drill holes, various geophysical surveys, soil geochemistry and metallurgical testing. When CRA merged with Rio Tinto, in 1997, the Project was no longer a focus for the company and it was divested to Chemmet Pty Ltd. The company commissioned a resource calculation between 1999 and 2000 along with a scoping study for development options. In 2000 Mineral Estates Pty Ltd, a wholly-owned subsidiary of Hydromet Ltd, acquired the Project and undertook an independent Mineral Resource estimate. The company also commissioned a scoping study of mining and processing options by Resource Engineers Pty Ltd. The Tenements were then acquired by Toro Energy Ltd then Coolabah Group Pty Ltd and now Mangrove Resources Pty Ltd holds the Tenements over the Project area.

4.4 Wollogorang Cobalt Project – Recent Developments

The portfolio of Tenements in the Wollogorang Cobalt Project comprises: Exploration Licence 31272 (Running Creek, EL 31272), Exploration Licence 30590 (Selby, EL 30950) and Exploration Licence 30496 (Karns, EL 30496).

Table 4.2. Wollogorang Cobalt Project – Exploration Licences

Tenement ID	Area km^2	Grant Date	Expiry Date
EL30496	368.45	28/05/2015	27/05/2021
EL30590	351.82	28/05/2015	27/05/2021
EL31272	411.17	9/04/2016	8/04/2022

Source = Dept. Primary Industries and Resources, NT

Northern Cobalt commissioned Ravensgate International Pty Ltd (**Ravensgate**) to undertake an independent assessment of the historical Co-Ni-Cu resource at the Stanton Cobalt Deposit and upgrade it to JORC 2012 compliance.

The upgraded Mineral Resource comprises 500,000t @ 0.17% Co, 0.09% Ni and 0.11% Cu (JORC 2012).

In addition, Ravensgate defined a global Exploration Target with a range of 2Mt grading 300ppm cobalt, 80ppm nickel and 5,000ppm copper to 10Mt grading 1,200ppm cobalt, 600ppm nickel and 3,000ppm copper (JORC 2012). Ravensgate noted that the potential quantity and grade is highly conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource in any of the prospects. Further information regarding the Exploration Target is set out in section 2.10 of the Independent Geologist's Report in Section 10.

Table 4.3. Stanton Cobalt Deposit Mineral Resource Estimates (JORC 2012)

Weathering	Volume (BCM)	Tonnage (Tonnes)	Cobalt (ppm)	Nickel (ppm)	Copper (ppm)
Sulphide	70,000	180,000	2,000	1,200	900
Oxide	140,000	320,000	1,600	700	1,300
TOTAL	210,000	500,000	1,700	900	1,100

Notes: Tonnage is report as dry tonnes (t)
Cut-off grade 500ppm Co
BCM means bank cubic metres
Rounding has been applied to appropriately reflect the precision of the estimate

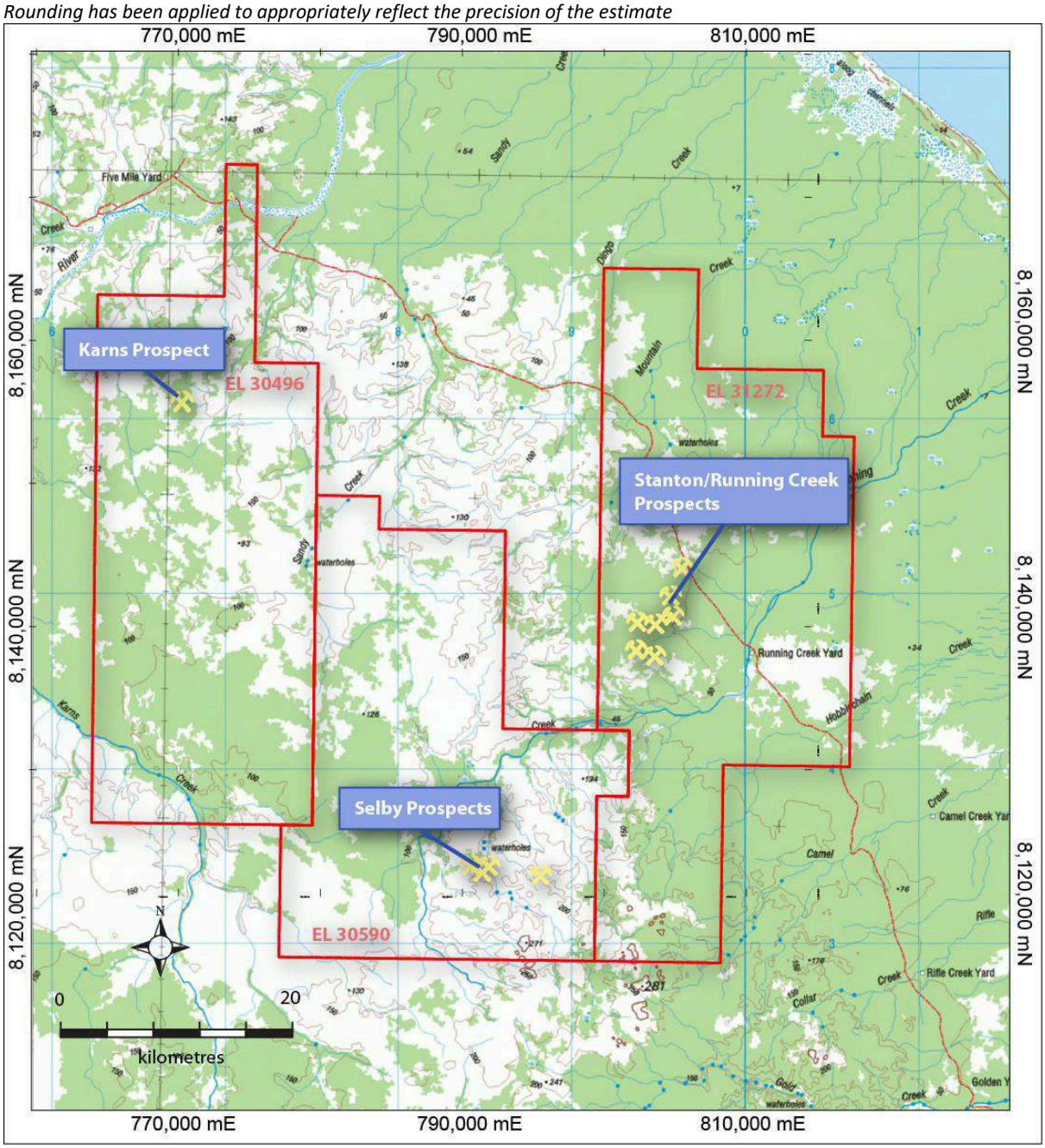


Figure 4.3. Location map showing Tenements and Project location (21/6/2017)(M. Schwarz)

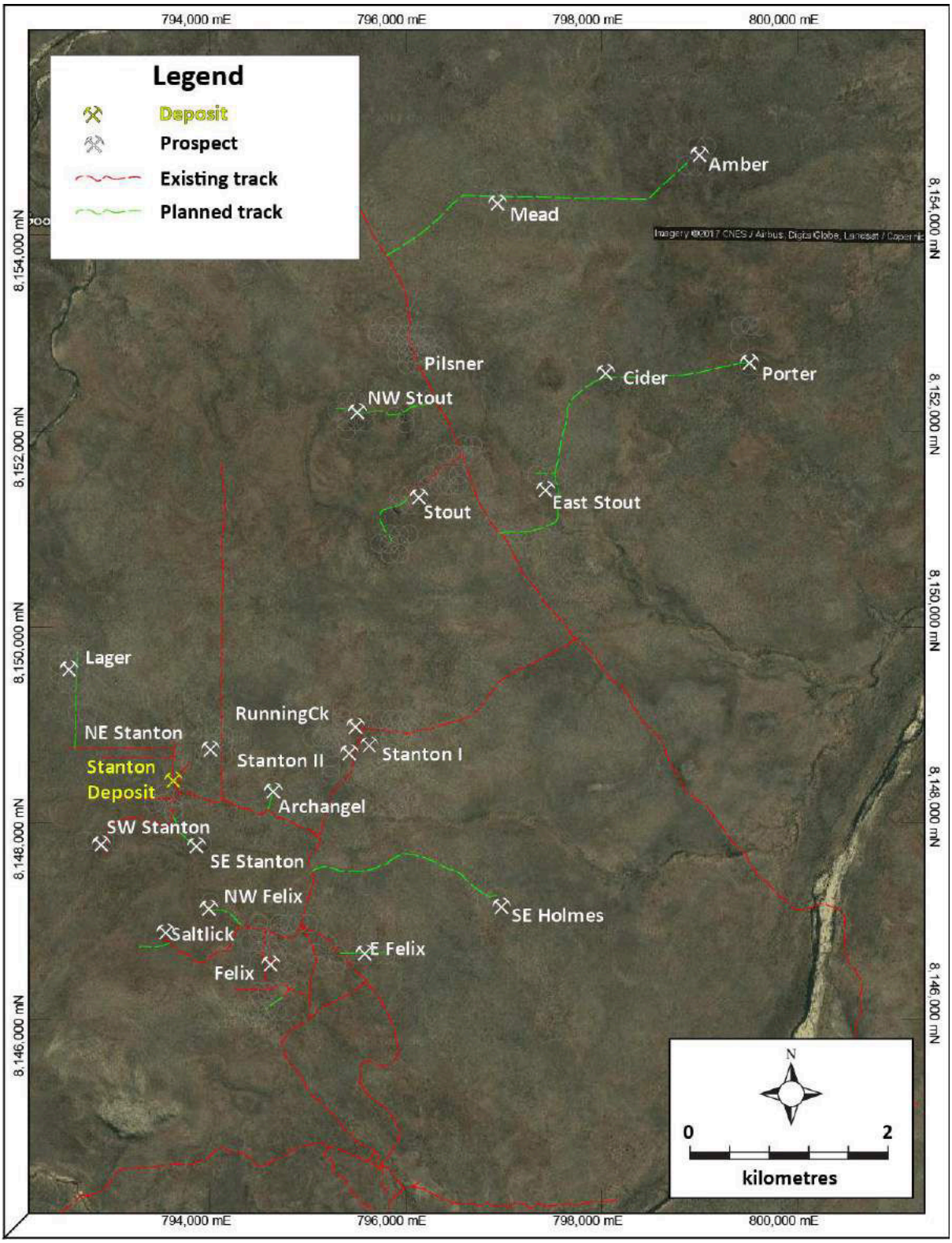


Figure 4.4. Location map showing Stanton-Running Creek Co-Cu-Ni prospect locations (21/6/2017) (M. Schwarz)

COMPETENT PERSONS STATEMENT

The information in this report that relates to Mineral Resources and Exploration Targets is based on information compiled by Mr David Reid, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Reid is an employee of Ravensgate. Mr Reid has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012 edition). Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

4.5 Exploration and Drilling Programs

The Stanton Cobalt Deposit contains an Inferred Mineral Resource of 500,000t @ 0.17% Co, 0.09% Ni and 0.11% Cu (JORC 2012). This deposit occurs within one of many breccia pipes known to occur within EL31272.

The initial phase of exploration will aim to increase the global Mineral Resource inventory to the stated Exploration Target of 2Mt grading 300ppm cobalt, 80ppm nickel and 5,000ppm copper to 10Mt grading 1,200ppm cobalt, 600ppm nickel and 3,000ppm copper (JORC 2012). Ravensgate note that the potential quantity and grade is highly conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource in any of the prospects. Further information regarding the Exploration Target is set out in section 2.10 of the Independent Geologist's Report in Section 10.

The secondary objective will be to upgrade the Inferred Mineral Resource at the Stanton Cobalt Deposit to the Indicated Mineral Resource category status.

Once these targets have been achieved the Company aims to quickly move to assess the development options for the Project.

4.6 Infrastructure

The Wollogorang location is in a semi-remote location (Figure 4.5). There is, however, the advantage of proximity to two major ports. Bing Bong, the major port servicing the McArthur River Mine, lies approximately 200 km to the north-west and Karumba lies approximately 340 km to the east-south-east across the border in Queensland. A network of maintained unsealed roads connects Wollogorang Station Homestead to Bing Bong via Borroloola and a combination of maintained unsealed roads and all weather sealed roads connect the homestead with Karumba in Queensland. Electricity and water infrastructure is limited in the region and would need to be sourced locally.

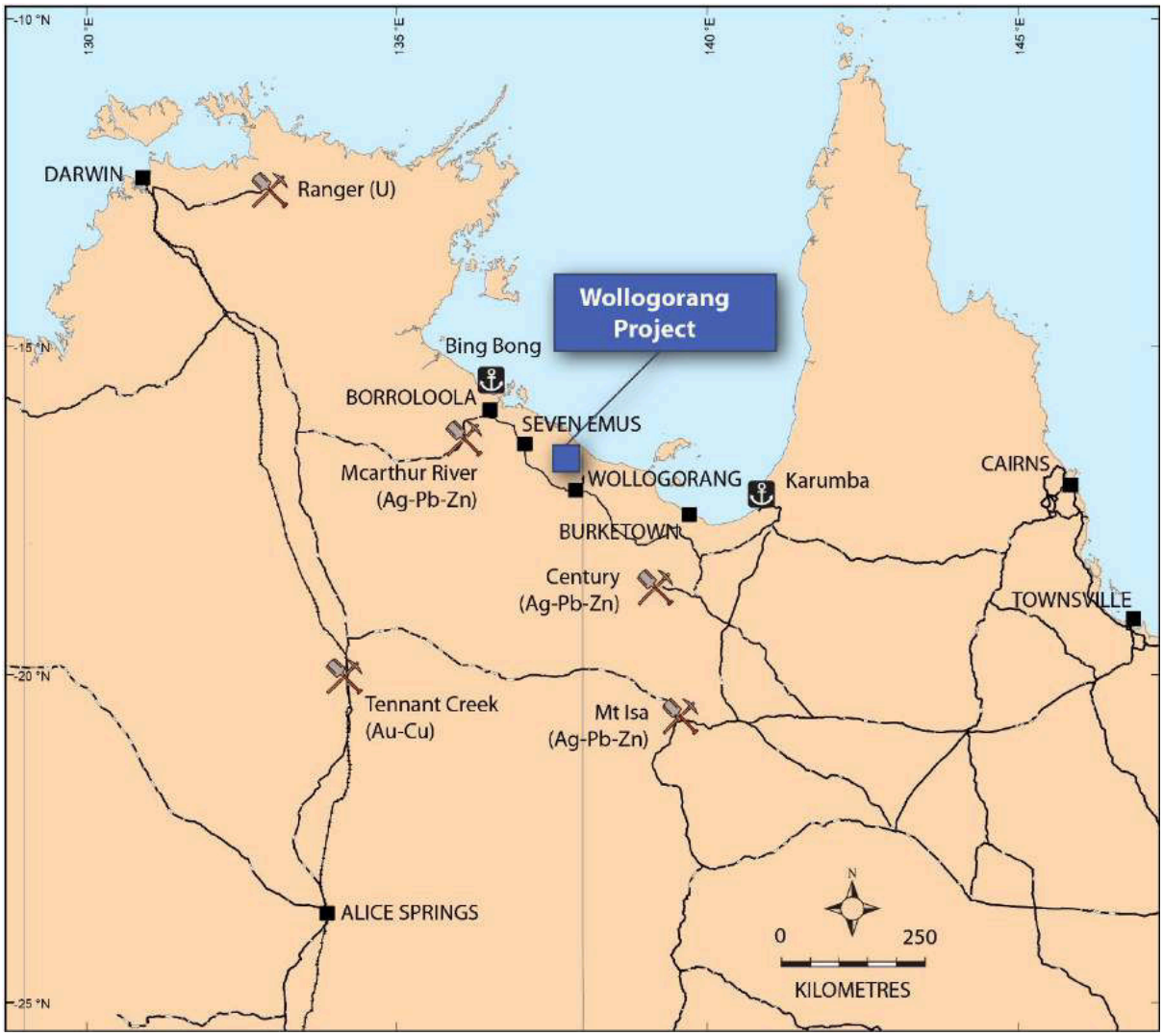


Figure 4.5. Location map (M. Schwarz)

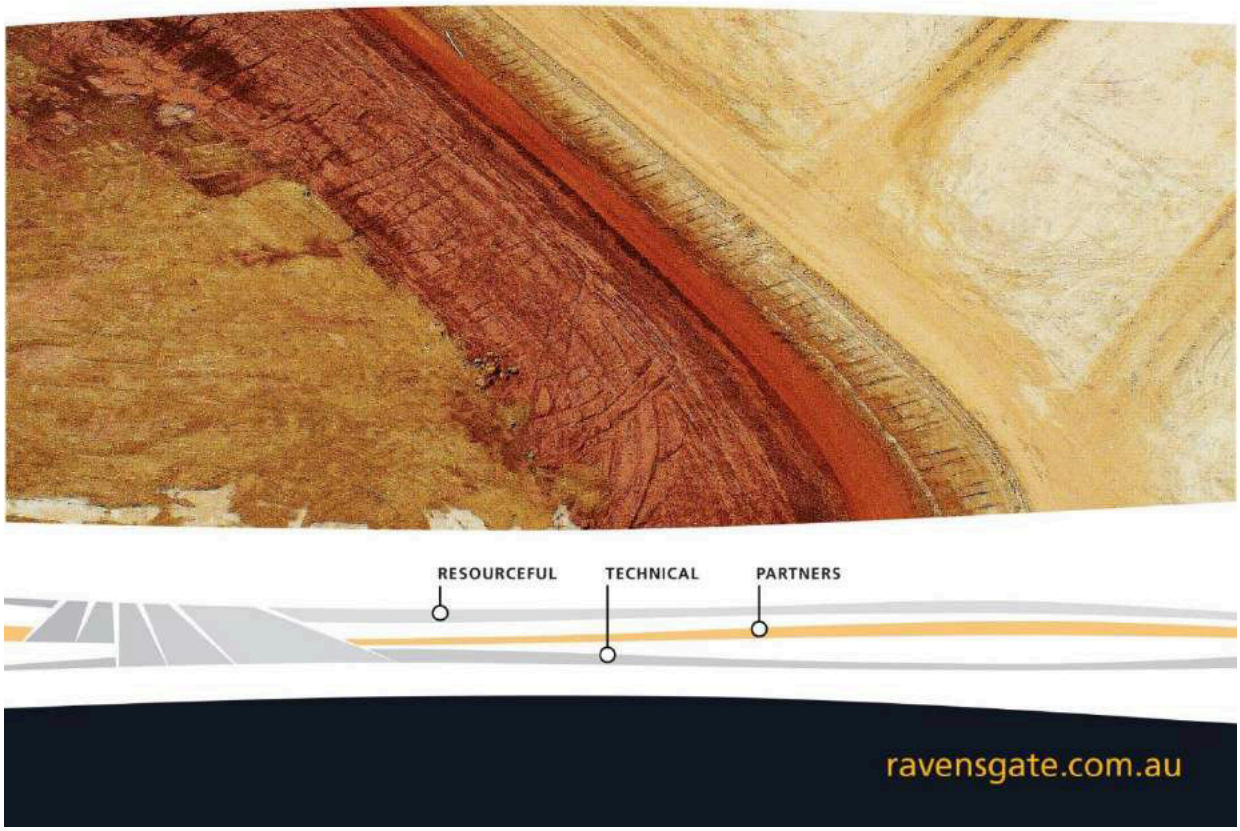
Ravensgate
Mining Industry Consultants

INDEPENDENT COBALT INDUSTRY REPORT

For

NORTHERN COBALT LIMITED

27 MAY 2017



EXECUTIVE SUMMARY

Cobalt is a lustrous steel grey metal and one of only three naturally occurring magnetic metals, with iron and nickel, which possess similar properties to each other in terms of hardness, tensile strength, machinability, thermodynamic properties and electrochemistry. The uses of cobalt can be broken broadly into two groups - metallurgical and chemical. Metallurgically, cobalt is a critical element in alloys that need to endure severe temperature and mechanical stress, due to its properties of high temperature resistance, hardness and wear characteristics. These qualities make it ideal for superalloys, hard metals and diamond tools, special steels and alloys, as well as high temperature, high strength magnetic materials. The principal chemical use is in the cathodes of certain rechargeable lithium-ion batteries, as well as uses as catalysts in the petrochemical and plastic industries, colouring in pigments and ceramics; and as paint driers and use in the tyre industry.

Most cobalt is produced as a by-product of copper and/or nickel mining operations, with cobalt being refined from a concentrate. Cobalt is only extracted alone from the Moroccan and Canadian Arsenide ores and there are only a few of these primary cobalt mining operations. Over 50% of the worlds cobalt is currently mined from the Democratic Republic of the Congo (DRC) primarily as a by-product of copper mining. Outside of the DRC, there are no other countries that could be termed significant cobalt producers, therefore with over 50% of the world's cobalt production, it is a potential recipe to cause instability and volatility in supply and demand, particularly through political instability, such as in 2008. The DRC is also under scrutiny due to the use of child labour and poor working conditions – particularly with artisanal cobalt production which is said to account for ~20% of cobalt exported from the DRC. As more attention is being directed at material supply chain sustainability on both the International and National levels we have seen efforts such as that of the OECD, the U.S. Government (Dodd-Frank Act) and various industry coalitions focus attention on the chain of custody of a group of minerals defined as "Conflict Minerals." Although cobalt is not a Conflict Mineral as such, it has on occasion been incorrectly associated with them, which has created some product uncertainty. Despite having some of the world's largest mining companies producing cobalt, due to the lack of supply chain transparency in the DRC and the way cobalt is mined and traded, there will be questions of whether they are linked to the conflict in the country or illegal practices such as child labour. Due to this lack of transparency a number of end users of Li-ion batteries (in particular, global organisations such as Tesla and Apple) have indicated their preference for using ethically mined cobalt from other countries, which could create a large supply deficit.

China is the largest producer of refined cobalt by a large margin putting it in control of the majority of cobalt supply. China's cobalt refineries mainly import its feed from the DRC as ores and concentrates to supply its burgeoning chemicals industry. China, with 38% global cobalt consumption, leapfrogged both Europe and North America (combined 27%) in 2015, with CRU estimating Asia's consumption to account for 79% of global supply (China 39%) by 2020. Presently, 79% of the end use of the global consumption of cobalt is by chemicals and superalloys, however the demand for cobalt over the next 10 years is going to be driven by lithium-ion batteries especially in Electric Vehicles (EVs). CRU anticipates a 68% increase in cobalt consumption between 2015 and 2025. Lithium-ion batteries for EVs will drive an increase in cobalt demand in the order of 250% over this timeframe. CRU estimates that 30kt of cobalt will be consumed by 2025 versus 8kt in 2016. In 2014, lithium-ion rechargeable batteries accounted for 33.4% of the total rechargeable battery market, which Bernstein estimates to rise to 70% in 2025.

Of the five main lithium battery types, three contain battery cathodes containing cobalt. In 2015, these cobalt based batteries dominated market share, representing 68% of the global lithium-ion battery market. Global shipments of cobalt based cathodes reached 223,400t in 2015, which is growing by 30% year on year. Despite the popularity and continued demand for mobile electronics such as smart phones, tablets and laptops, which has dominated the end user share for the last 20 years, the market share of mobile electronics batteries is predicted to compress by some forecasters, compared to the fast growing cobalt-based batteries due to their applications in EV's and energy / power storage utility systems.

EV's are a key driver for cobalt-based lithium-ion batteries as there is a continued focus on global climate change issues and associated vehicle emissions, with many commentators claiming there is a significant buy-in to the argument that disruptive forces are now at play which will result in global demand for EV's reaching ~7 million units in 2020 (compared to 800,000 in 2015). As well as specialist companies such as Tesla, traditional carmakers are also embracing EV and hybrid technology which will further accelerate the demand for batteries and their associated raw materials.

Recent (2009–2015) cobalt price weakness has been responsible for the lower level of investment committed to existing or new mines. Examining all potential mine openings/expansions over 2016–2018F, there is expected be 23,000t gross of potential new supply (representing a 7.6% production growth rate 2016–2018F). Despite the positive numbers, it is considered highly unlikely all of this tonnage will actually be delivered to the market (typically a fraction of new production targets are met). On a net supply basis, (including existing supply curtailments) the cobalt market is forecast to grow (2015-2018F) by only a compound annual growth rate (CAGR) of 2.4% and (2015–2020F) 3.5% CAGR, a more modest supply picture. New projects are expected to boost cobalt mine production, but the timing of these projects ultimately relies on nickel and copper prices. Existing producers are unlikely to increase production of cobalt without an increase in the nickel or copper price, due to cobalt being a by-product of these primary metals. Weak prices in these two primary metals result in lower production of all three metals. As well as activities in the DRC, recent policy changes in countries such as Indonesia and the Philippines (two of the largest nickel producing regions with by-product cobalt) should also be monitored.

In the last 10 – 20 years there have been many significant technical developments in the processing of copper-cobalt and nickel-cobalt ores. Together, these developments have helped to satisfy a steadily increasing world demand for cobalt. There is a wide range of cobalt recovery processes available, although each has pro's and con's and there is not an entirely satisfactory or obvious flowsheet for cobalt recovery. The choice of process steps is often driven mostly by the project owner's requirements in terms of cobalt product and grade, and is constrained by other factors such as environmental compliance, logistics and risk.

Ultimately, the opportunity exists for well-placed cobalt producing projects, producing a quality product, to be successfully developed to fill a gap in future demand growth. This is therefore, a unique opportunity for projects with cobalt as the primary metal, as these operations have more control over their cost structure and are not exposed to fluctuations in copper and nickel prices.

5.1 Introduction

The objectives of this report are to provide an introduction and overview to the global cobalt industry. Particular description is focussed on the cobalt supply chain from global deposits, production, processing methods, applications, incumbents, future market balances and pricing. Since the early years of cobalt production, and particularly during the last century, the major source of cobalt has changed whilst the world's cobalt usage has increased steadily. Cobalt is produced mostly as a by-product of other major metal extraction processes – mainly copper and nickel – and in recent decades the nickel industry has been the major source of additional cobalt.

5.1.1 Metal Properties

Cobalt (chemical symbol Co, atomic number 27) is a shiny, steel grey, brittle metal with a close packed hexagonal crystal structure at room temperature that changes at 421°C to a face centred cubic form. The metal is rarely used as a structural material in the pure form but almost always as an alloy or a component of another system.

Source: Miningnews.com

Cobalt is one of only three naturally occurring magnetic metals (with iron and nickel). The melting point of cobalt metal is 1,493°C (2,719°F) with the boiling point 3,100°C (5,600°F). The density is 8.9 grams per cubic centimetre.

Cobalt's high melting point allows it to retain its strength to a high temperature, making it ideal for cutting tools, superalloys, surface coating, high speed steels, cemented carbides and diamond tooling (see below).

5.1.2 Cobalt Uses

The uses of cobalt can be broken broadly into two groups – metallurgical and chemical.

Metallurgical Uses

Cobalt is a critical element in alloys that need to endure severe temperature and mechanical stress, due to its properties of high temperature resistance, hardness and wear characteristics. Alloys containing cobalt have higher melting points, superior hot corrosion, thermal fatigue and greater wear resistance.

Specific metallurgical uses include:

- Superalloys - have superior creep resistance at high temperatures, excellent surface stability and high resistance to corrosion and oxidation. These properties make them ideal for the hottest parts of gas turbines, both for power generation and aircraft. Superalloys are widely used in various industrial, medical, automotive and defence related applications.
- Hard metals and diamond tools – cobalt powders are used as binding material in cemented carbide and diamond tool applications used in concrete and steel cutting, mining, oil and gas drilling and construction.

- Special steels and alloys – special cobalt alloys known as stellites are used to coat other metals providing them high temperature properties and erosion resistance. It is used to improve strength and temperature resistance of high speed steels used in high end drilling and cutting. Cobalt is also used to create prosthetic and dental alloys due to its biological compatibility.
- Magnets – due to cobalt's ferro-magnetic properties, it is alloyed with aluminum and nickel to produce a permanent magnetic alloy known as AlNiCo. It can be combined with samarium to make SmCo magnets an advanced high temperature, high strength magnetic material. SmCo magnets are used in automotive, aerospace, military and industrial applications where high temperature performance is critical.

Chemical Uses

Cobalt has been used for colouring ceramics for over 3,000 years. The tomb of Pharaoh Tutankhamen, who ruled from 1361-1352 BC, contained a small glass object coloured deep blue with cobalt. Cobalt blue was known even earlier in China and was used for pottery glazes. Cobalt is used in many industrial chemical processes with approximately half of the worlds' cobalt supply used in lithium-ion batteries.

Specific chemical uses include:

- Battery chemicals – cobalt is a critical component in the cathode of rechargeable lithium-ion batteries. Presently over half of the worlds' cobalt supply is used for rechargeable batteries which are used in portable electronics, energy storage systems, electric vehicles and many other applications. Electric vehicles have been recognised as being the biggest growth area for cobalt usage in the years to come.
- Catalysts – cobalt is used in catalytic processes within the petrochemical and plastic industries. It is used to remove sulphur during the refining of oil and gas, produce resins for plastic bottles and polyester; and to convert natural gas into liquid fuels. Cobalt's use as a catalyst represents the third largest consuming market after the battery chemical and superalloy markets.
- Pigments and ceramics – cobalt is used for colouring porcelain, paints, inks and enamelware. It is also used to colour glass or as a decolouriser suppressing the yellow tint glass would usually have due to iron contamination.
- Paint driers and tyres – cobalt salts are used to accelerate the drying of oil based paints, inks and varnishes. Cobalt compounds are used within the manufacture of radial tyres to promote adhesion between rubber and the brass plated steel cable.

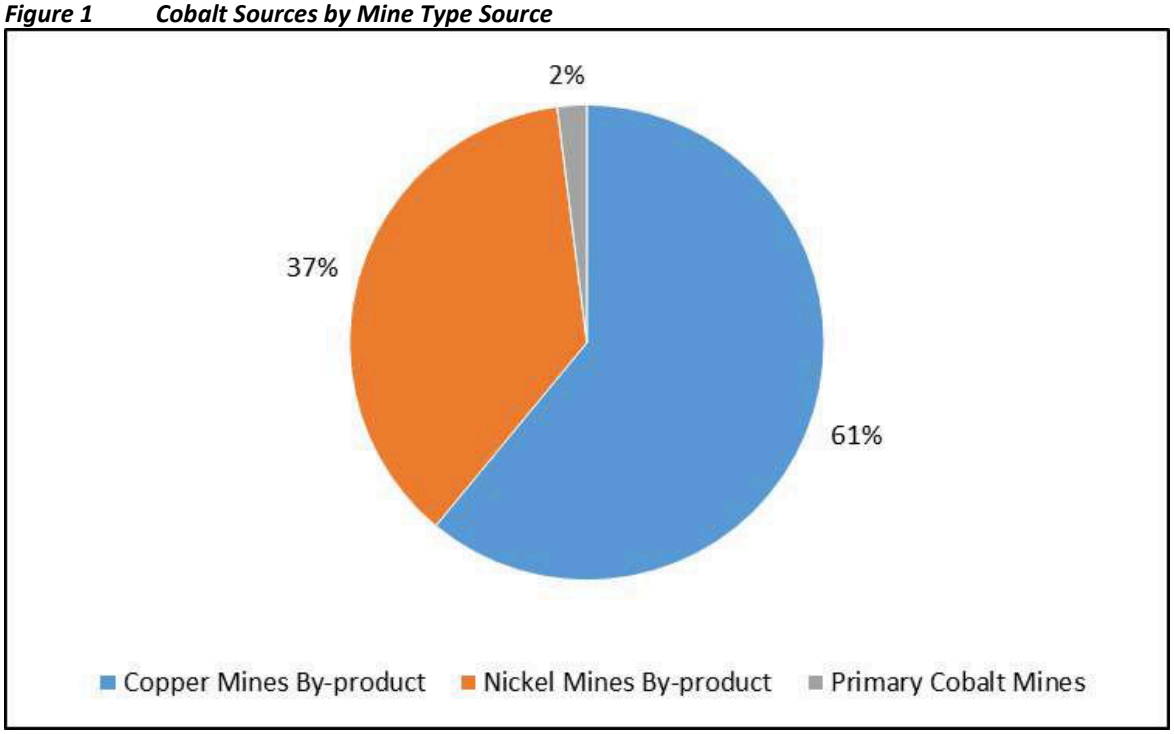
5.2 Supply and demand

5.2.1 Cobalt Supply

Cobalt is not a particularly rare metal and it ranks 33 in abundance. It is however widely scattered in the Earth's crust but is only found in potentially exploitable quantities in several countries, 17 of which currently produce. There is only 20ppm cobalt in the earth's crust but cobalt is an important element for humankind, in fact essential as the central component of vitamin B12 which catalyses the regeneration of red blood cells. Until recently, the world has only required a small amount of cobalt compared to major metals such as copper, nickel, iron and zinc; which is fortuitous since in nature cobalt occurs in relatively minor quantities in association with ores of other metals – predominantly copper, nickel and silver/arsenic. Hence cobalt is seldom mined solely in its own right and its recovery is usually viewed as a by-product.

Most cobalt is produced as a by-product of copper and/or nickel mining operations, with cobalt being refined from a concentrate. Cobalt is only extracted alone from the Moroccan and Canadian Arsenide ores and there are only a few of these primary cobalt mining operations (Figure 1). A small proportion of cobalt is produced by artisanal miners which sometimes utilises child labour.

Figure 1 Cobalt Sources by Mine Type Source



Source: Sherritt, CRU

5.2.2 Cobalt Mine Production

Cobalt was originally mined together with silver and arsenic in Saxony and Bohemia in the 15th century but its use then was only in the oxide form as a colorant (cobalt blue). Swedish chemist Georg Brandt first isolated metallic cobalt in 1735 and it was subsequently established as an element in 1780 by Torbern Bergman. Only after that were industrial uses other than colouring developed and until circa 1914, cobalt was generally only available or used as the oxide.

By the early 19th century, cobalt deposits had been found all around the world; including Germany, Norway, Sweden, Transylvania (Rumania), France, Spain, England, Chile, Argentina and Tasmania. In the late 19th century, the oxidized cobalt mines of New Caledonia became the major source of cobalt, producing “alliage blanc”, up until 1904 when the silver-cobalt-arsenic ores of Cobalt, Ontario started being exploited. Cobalt production at this time was only ~1,000 tonnes per annum (tpa). Subsequently cobalt-arsenic deposits were also mined in Bou-Azzer, Morocco from 1932 and the Blackbird district of Idaho, USA from 1952.

From 1926, cobalt production as a by-product from the Congo’s copper mines (Union Minière du Haut Katanga at the time) came to the fore with Northern Rhodesia (Zambia) joining in 1934. The first commercial cobalt electrowinning plant was opened in 1945 at Shituru, Democratic Republic of the Congo (DRC), closely followed by Rhokana, Zambia in 1952; at which point world consumption was still less than 10,000tpa. After World War II, the demand for cobalt metal increased considerably, driven by the requirement for high-purity cobalt for aircraft jet engines and gas turbines. There was also a major increase in demand for nickel for use in stainless steel, including highgrade nickel for nuclear reactor stainless steels. This was satisfied by growing output from the massive nickel sulphide deposits of Canada (Sudbury) and Russia (Norilsk); with the associated cobalt output helping to meet the increasing cobalt demand.

Nickel oxides (laterites) were first processed by hydrometallurgy in 1944 at Nicaro in Cuba (by the Caron Process) and in 1959 the first sulphuric acid pressure leach plant came on line at Moa Bay, Cuba; thereby adding nickel laterites as a significant source of by-product cobalt – a source that would grow in importance subsequently.

From the 1950’s, world cobalt production was dominated by the Congo (Zaire, now DRC) and Zambia, peaking in 1986. Thereafter this source declined dramatically, however cobalt from emerging nickel producers increased substantially such that cobalt produced from combined nickel sources (sulphides plus laterites) became the world leader (Fisher, 2011).

Over 50% of the worlds cobalt is currently mined from the DRC primarily as a by-product of copper mining (see Table 1), with three of the five largest individual mines also located in the DRC (see Table 2). Outside of the DRC, there are no other countries that could be termed significant cobalt producers.

Table 1 Recent World Cobalt Mine Production by Country

Country	Mine Production (t)		
	2014	2015	2016
DRC	63,000	63,000	66,000
China	7,200	7,700	7,700
Canada	6,570	6,900	7,300
Russia	6,300	6,200	6,200
Australia	5,980	6,000	5,100
Zambia	5,500	4,600	4,600
Cuba	3,700	4,300	4,200
Philippines	4,600	4,300	3,500
Madagascar	3,100	3,700	3,300
New Caledonia	4,040	3,680	3,300
South Africa	3,000	3,000	3,000
United States	120	760	690
Other Countries	7,080	11,600	8,300
World Total	**123,000**	**126,000**	**123,000**

Source: USGS

Table 2 Top 5 Cobalt Producing Operations 2015 & 2016

Rank	Operation	Country	Commodities	Cobalt (t)	
				2015	2016
1	Mutanda	DRC	Copper, Cobalt	16,500	24,500
2	Tenke Fungurume	DRC	Copper, Cobalt	16,013	16,053
3	Ruashi-Etoile	DRC	Copper, Cobalt	4,344	3,391
4	Moa Bay	Cuba	Nickel, Cobalt, Iron Ore	3,734	3,694
5	Ambatovy	Madagascar	Nickel, Cobalt, Magnesium	3,464	3,273

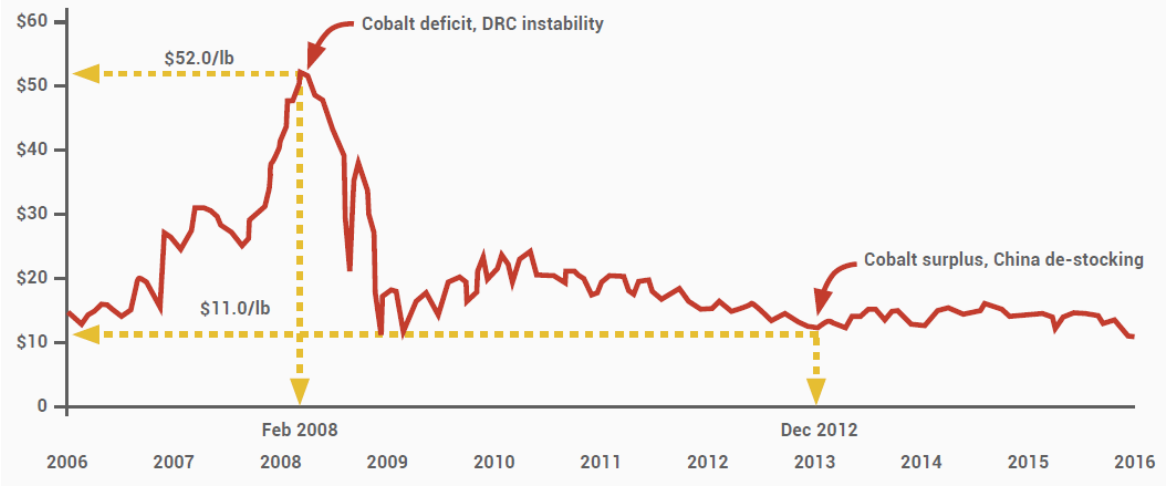
Source: SNL.com, Glencore PLC, Lundin Mining Corp, Sherritt International, Jinchuan Group

5.2.3 Industry Chain

With the DRC providing over 50% of the world's cobalt production it is a potential recipe to cause instability and volatility. This was last seen in 2008 (Figure 2) on the back of political instability in the

DRC where over an 18 month period the price of cobalt leapt from US$11/lb to over US$52/lb. The current price in April 2017 has been hovering around US$25/lb (US$55,000/t).

Figure 2 Historical High-Grade Cobalt Metal Price – Average $/lb for 99.8% Cobalt Metal

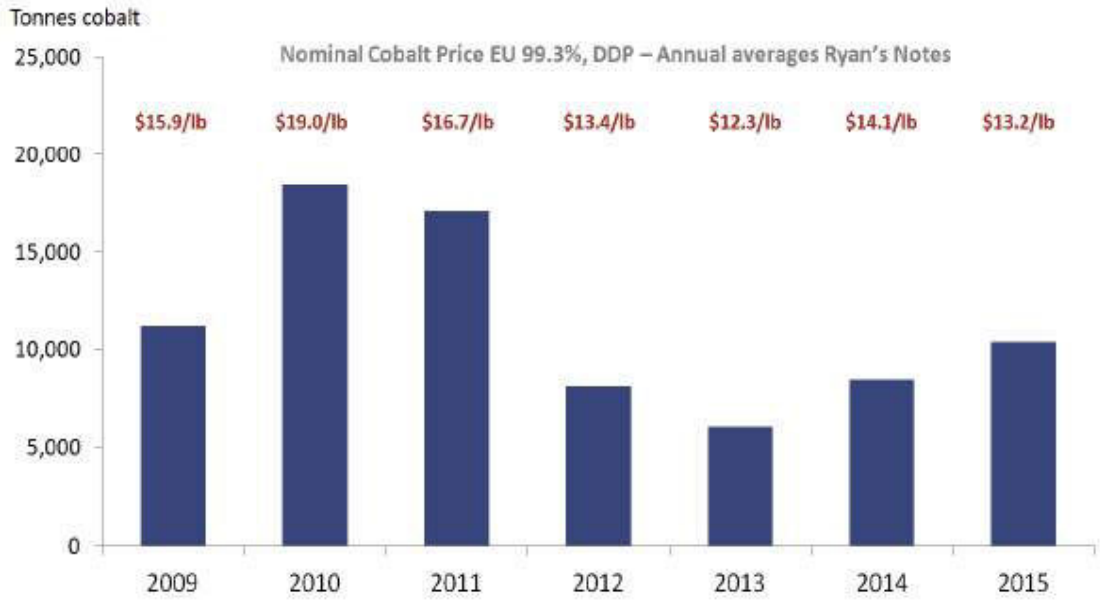


Source: Global Energy Metals, Metals Bulletin

5.2.4 Ethical Cobalt and the Democratic Republic of the Congo

Amnesty International put the spotlight on cobalt and its supply from the DRC exposing the use of child labour in artisanal cobalt production. The DRC government mines minister in an interview with Amnesty International estimated that up to 20% of cobalt currently exported from the DRC comes from artisanal miners (Amnesty). In 2015, CRU estimated that 10,500t cobalt from the DRC was from artisanal sources. Artisanal cobalt miners are swing producers, meaning in times of tight supply they provide more supply (Figure 3).

Figure 3 Estimated Supply of Cobalt from Artisanal Miners in DRC



Source: CRU

As more attention is being directed at material supply chain sustainability on both the International and National levels we have seen efforts such as that of the OECD, the U.S. Government (Dodd-Frank Act) and various industry coalitions focus attention on the chain of custody of a group of minerals defined as "Conflict Minerals." These generally are defined as gold, tantalum, tungsten and tin

containing minerals originating from the DRC and adjacent countries. Although cobalt is not a Conflict Mineral, it has on occasion been incorrectly associated with such and this has created some product uncertainty.

Despite having some of the world's largest mining companies producing cobalt, due to the lack of supply chain transparency in the DRC and the way cobalt is mined and traded, there will be questions of whether they are linked to the conflict in the country or illegal practices such as child labour. Due to this lack of transparency a number of end users of Li-ion batteries (in particular, global organisations such as Tesla and Apple) have indicated their preference for using ethically mined cobalt from other countries, which could create a large supply deficit.

Consequently, the current demand and supply dynamics for cobalt are favourable for groups with prospective projects in stable jurisdictions, such as Australia.

5.2.5 Refined Cobalt Production

China is the largest producer of refined cobalt by a large margin (Table 3) putting it in control of the majority of cobalt supply. China's cobalt refineries mainly import its feed from the DRC as ores and concentrates.

Table 3 Refined Cobalt Production by Country in Tonnes

Country	Source of Feed	2014	2015	2016
China	Domestic/DRC/Intermediates	39,292	48,719	45,046
Finland	New Caledonia/Africa/Australia/Others	11,452	8,582	11,187
Belgium	Australia/DRC/Secondary	5,850	6,306	6,329
Canada	Domestic/Australia/Cuba/Secondary	5,261	5,591	5,544
Zambia	Domestic/DRC	4,317	2,997	4,725
Japan	Australia/Philippines	3,654	4,259	4,305
Norway	Canada/Africa/Australia/Russia/Others	3,600	3,100	3,500
Madagascar	Domestic	2,915	3,464	3,273
Australia	Domestic/New Caledonia	5,419	5,150	3,200
Russia	Domestic	2,302	2,040	3,092
Morocco	Domestic	1,391	1,722	1,568
South Africa	Domestic	1,332	1,300	1,101
DRC	Domestic	3,300	3,300	400
Brazil	Domestic	1,350	1,300	400
France	New Caledonia	219	133	119
India	Domestic/Cuba/DRC/Secondary	100	150	100
Total		**91,754**	**98,113**	**93,889**

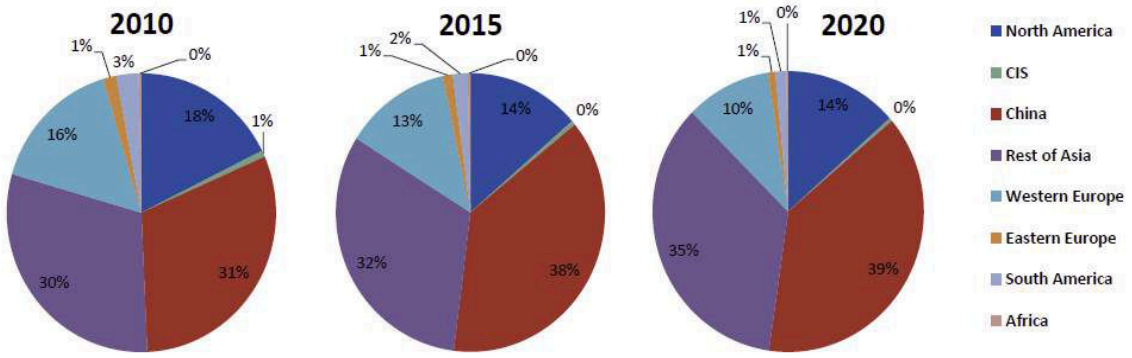
Modified After: CDI

5.2.6 Overview of Cobalt Demand

The global consumption of refined cobalt has changed rapidly (see Figure 4) with North America and Western Europe accounting for 34% of consumption in 2010. By 2015 North America and Western Europe's share had dropped to 27% and China had become the dominant force consuming 38% of

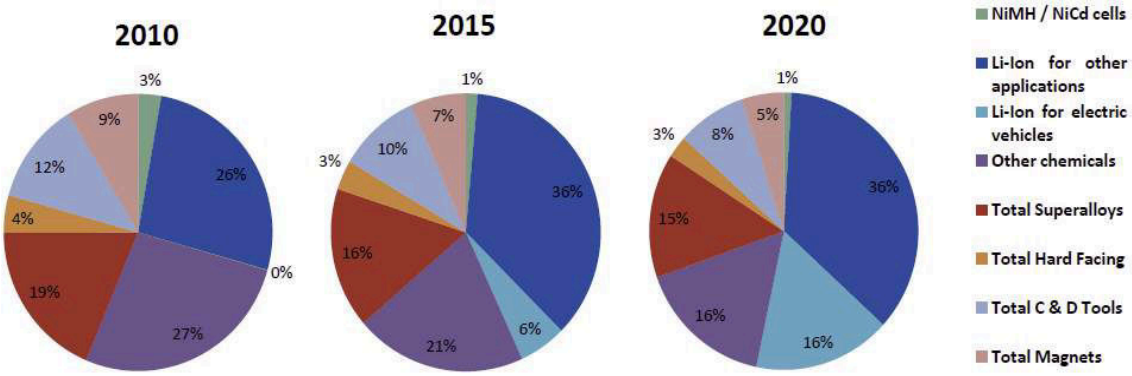
cobalt due to its burgeoning chemicals industry. In 2020, CRU expects Asia's consumption to be 74% of supply (China 39%) and North America and Western Europe's share to have dropped to 24%. Presently, 79% of the end use (Figure 5 - centre) of the global consumption of cobalt is by chemicals and superalloys.

Figure 4 Global Cobalt Consumption by Region



Source: CRU

Figure 5 Global Cobalt Consumption by End Use



Source: CRU

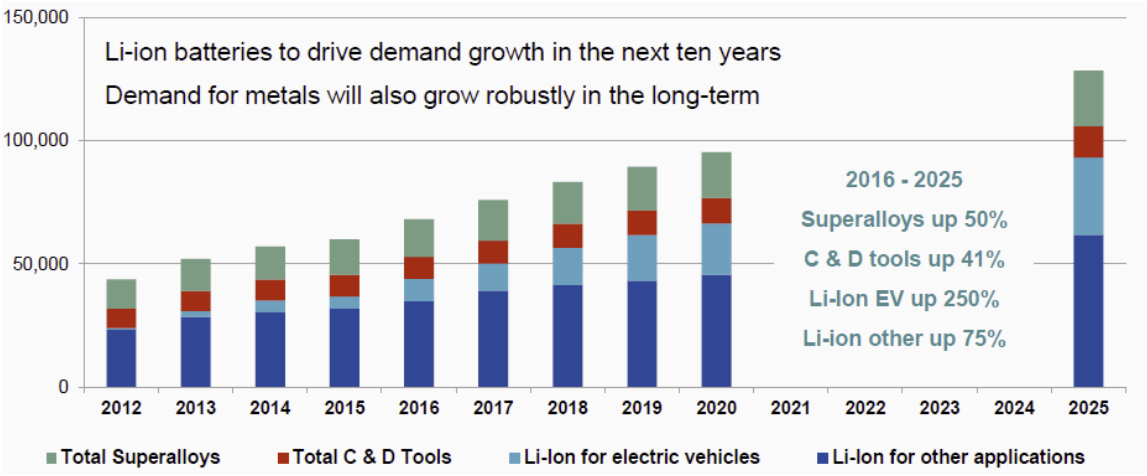
5.2.7 Cobalt Demand for Batteries

Lithium-ion (Li-ion) rechargeable batteries have grown in stature over the past 20 years and are now the dominant technology used over rivals, such as nickel cadmium and nickel-metal hydride batteries. Several reasons contributing to this growth include:

- Establishment and significant global scale that makes it difficult to readily disrupt;
- Safer than traditional nickel cadmium and nickel-metal hydride batteries;
- Relatively cheap to manufacture, which will gain traction as the giga-factories (e.g. Tesla) come on line;
- Superior and more efficient energy density ratings; and
- The best commercially accepted energy storage capacity.

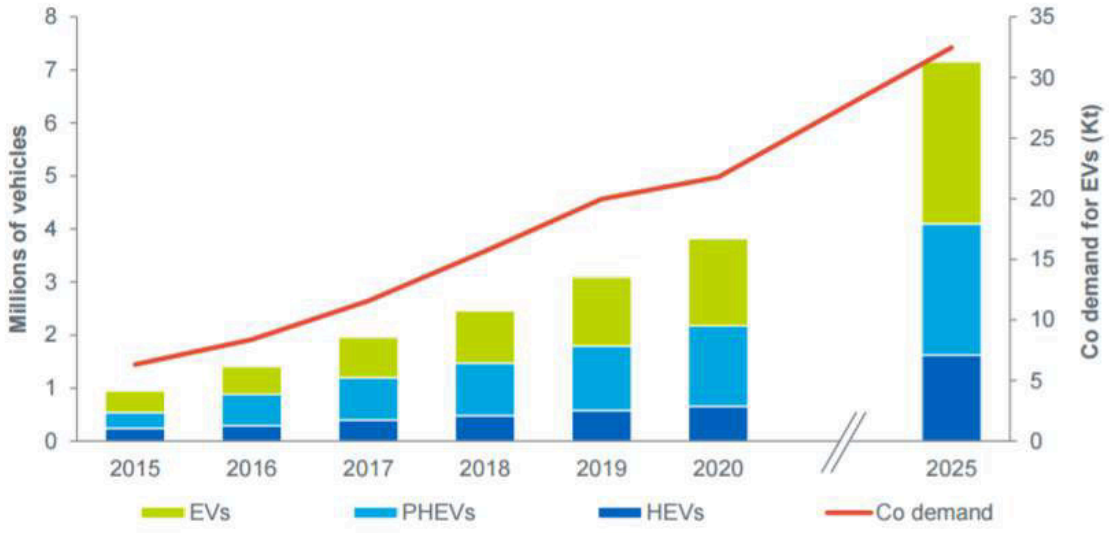
The demand for cobalt over the next 10 years is going to be driven by Li-ion batteries (Figure 6) especially in Electric Vehicles (EVs). CRU anticipates a 68% increase in cobalt consumption between 2015 and 2025. Li-ion batteries for EVs will drive an increase in cobalt demand (Figure 7) in the order of 250% over this timeframe. CRU estimates that 30kt of cobalt will be consumed by 2025 versus 8kt in 2016.

Figure 6 Global Cobalt Consumption



Source: CRU

Figure 7 Annual EV Production and Cobalt Demand for EVs



Source: CRU, Sherritt. Notes: PHEV – Plug-in Hybrid Electric Vehicle, HEV – Hybrid Electric Vehicle.

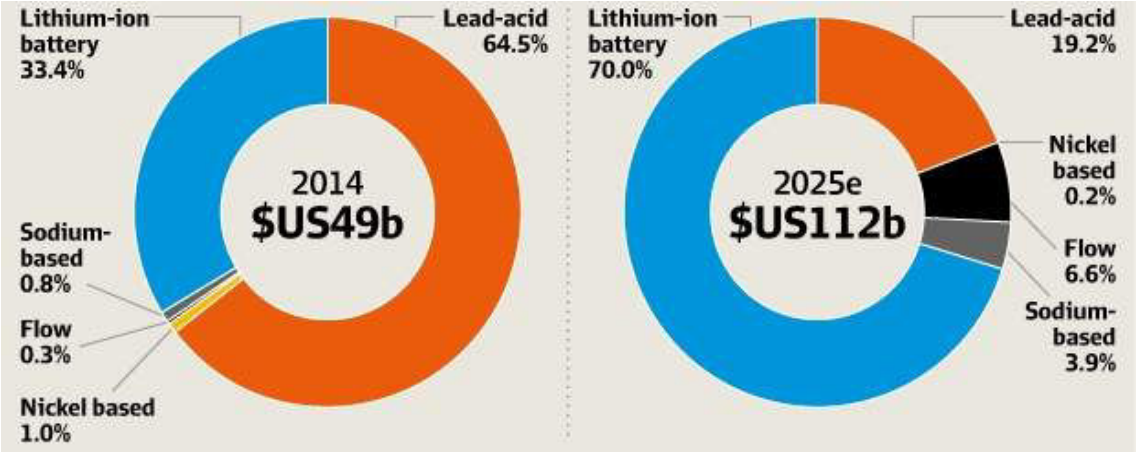
Batteries account for a third of the cost of building EVs and the raw materials account for approximately one third of the cost of the battery. According to the CRU, cobalt's future in EVs depends upon:

- Governments need to offer incentives;
- Manufacturing costs need to be kept down;
- Manufacturers need to accept lower profit margins;
- Customers must be willing to pay more;
- Future supply of cobalt must be secured; and
- Better alternatives (substitutes) need to remain elusive.

5.2.8 The Lithium Ion Battery Market

In 2014, Li-ion rechargeable batteries accounted for 33.4% of the total rechargeable battery market. Bernstein estimates this to rise to 70% in 2025 (Figure 8).

Figure 8 Estimated Change in Rechargeable Battery Market

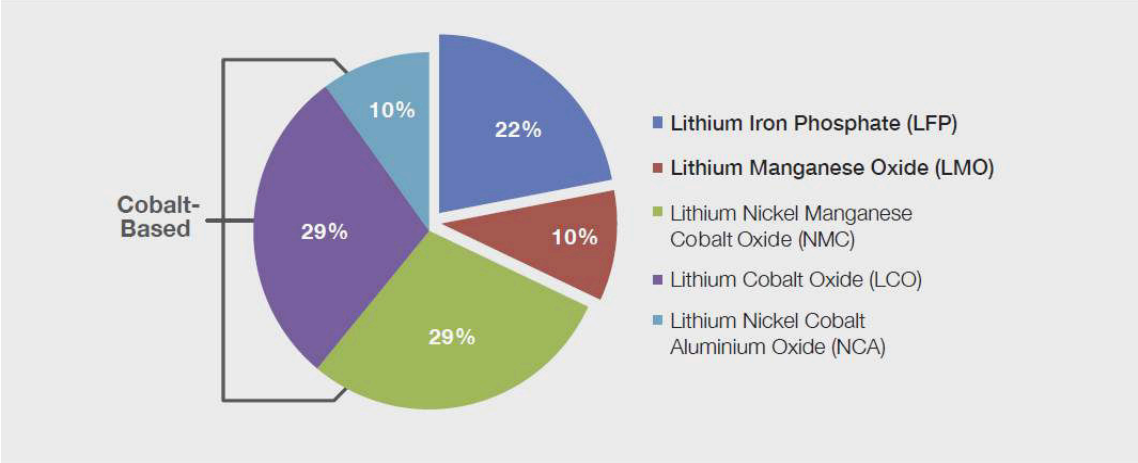


Source: Bernstein

There are five main lithium battery types, with Figure 9 showing the global demand breakdown:

- Lithium Iron Phosphate (LFP);
- Lithium Manganese Oxide (LMO);
- Lithium Nickel Manganese Cobalt Oxide (NMC) ~15% Cobalt;
- Lithium Cobalt Oxide (LCO) ~60% Cobalt; and
- Lithium Nickel Cobalt Aluminium Oxide (NCA) ~9% Cobalt.

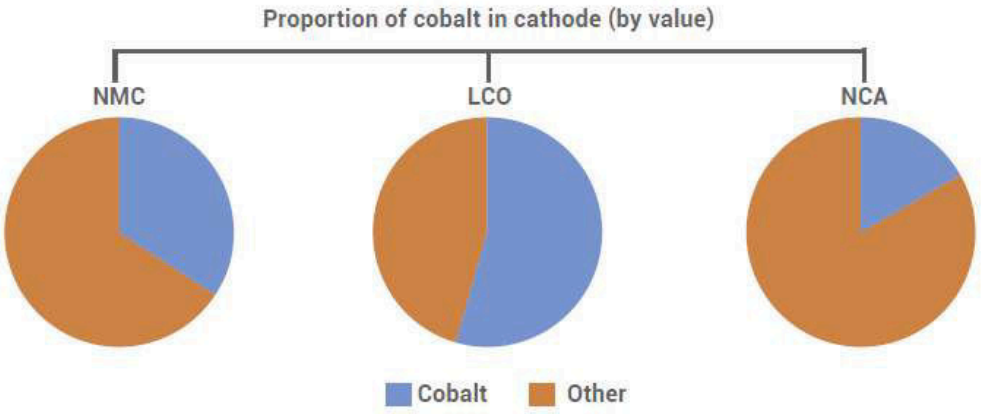
Figure 9 Global Demand Breakdown of Lithium Ion Batteries by Type - 2015



Source: Research In China

Of these, three contain battery cathodes containing cobalt (NMC, LCO and NCA) which are detailed in Table 4, with Figure 10 showing the proportion of cobalt by value in each of these cathodes. In 2015, these cobalt based batteries dominated market share, representing 68% of the global lithium-ion battery market. Global shipments of cobalt based cathodes reached 223,400t in 2015, which is growing by 30% year on year.

Figure 10 Proportion of Cobalt in Cathode (by Value)



Source: Benchmark Mineral Intelligence

Table 4 Cobalt-based lithium-ion batteries

Co-based Li-ion Alloy Mix	Applications	Comments
Lithium Nickel Cobalt Aluminium Oxide (NCA)	Electric vehicles (Tesla), industrial & electric power trains, medical devices	Has a higher energy density than NMC's, but a lower life-span
Lithium Nickel Manganese Cobalt Oxide (NMC)	Electric vehicles (Nissan Leaf, Chevrolet Volt, BMW i3), electric bikes, medical devices and various industrial applications	An improvement on LCO's with a longer life-span and a better energy density
Lithium Cobalt Oxide (LCO)	Mobile phones, tablets / iPads, laptops, cameras	An early generation Li-ion battery, with a limited life-span. Newer, improved systems matured to give extended life-spans

5.2.9 Electric Vehicles and Energy Storage Systems

Despite the popularity and continued demand for mobile electronics such as smart phones, tablets and laptops, which has dominated the end user share for the last 20 years, the market share of mobile electronics batteries is predicted to compress by some forecasters, compared to the fast growing NMC and NCA cobalt-based batteries due to their applications in electric vehicles (EV's) and energy / power storage utility systems.

EV's are a key driver for NMC and NCA's as there is a continued focus on global climate change issues and associated vehicle emissions, with many commentators claiming there is a significant buy-in to the argument that disruptive forces are now at play which will result in global demand for EV's reaching ~7 million units in 2020 (compared to 800,000 in 2015).

Figure 11 The Tesla Model S

Source: www.tesla.com

Although Tesla only sold ~80,000 units in 2016, the company is aiming to sell over 500,000 units of the more affordable Model 3 EV's in 2018, which will sell in Australia for ~$60,000, compared to ~$130,000 for the Model S (Figure 11) and has pledged to build 1 million EV's a year by 2020. Auto giant Volkswagen has recently stated its intention to become a leader in EV's by 2025, claiming it will leapfrog the competition for market share as it redirects its attention to battery-powered vehicles and emerges from its 2015 diesel emissions scandal. At this stage, Volkswagen has targeted 1 million EV sales by 2025. Whether it will be easier for a start-up with proven technology to scale up, or for a traditional carmaker to transform its operations, may form one of the big debates in the car world, however the next decade could result in a lithium-ion battery (and therefore, cobalt) shortage.

The ability of EV's to compete mainstream with petrol and diesel cars will ultimately come down to price (with the price of the EV battery packs being vitally important) and performance, which will depend on the range available. As the range and scale of EV's increases, prices will start to moderate and broaden their appeal to the greater mass market as a viable and affordable alternative to conventional petrol / diesel cars.

Further to the ambitions of Tesla and Volkswagen, the Chinese government has stipulated that no less than 30% of new vehicles purchased by the government or the public service will be new energy vehicles. BYD, the largest Chinese manufacturer of electric cars (e6) and electric buses (K9), has announced plans to increase its battery production by 6GWh each year and expects to be almost the capacity of Tesla's Gigafactory by 2020. In addition to this, Foxconn (the Taiwanese manufacturer of the Apple iPhone) is building a $811 million battery factory in northern China, with a further aim to build an EV with a price point of ~$15,000. Figure 12 shows the level to which mainstream car manufacturers are embracing the EV and hybrid market.

The price of battery packs per KWh has fallen dramatically over the past decade to currently under US$200/KWh (US$190/KWh according to Tesla as at April 2016). Tesla is targeting for this to fall to US$100/KWh, but has not specified a timeframe.

Figure 12 EV Ambitions of Major Car Manufacturers and IT Companies

TESLA	Recently introduced its full electric Model X and is targeting to reveal the new Model 3 in March 2016, with production and introduction of the $35,000 model scheduled for 2017. Construction of Tesla's $5 billion Gigafactory is ahead of schedule. First ESS cell production for Tesla Energy products is scheduled for the end of 2016 and first vehicle cell production is now targeted for 2017. Tesla delivered 50,557 Model S cars in 2015 and is aiming to ramp production up to 500,000 cars by 2020 *(for a more detailed description of Tesla's Gigafactory and the impact on cobalt we refer to the 2014-2015 version of the Cobalt Market Review).*
Ford	Scheduled to bring 13 new EV models to market by 2020 and recently announced to invest a further US$4.5 billion to achieve its electrification targets.
Mercedes-Benz	Will be introducing four entirely new electric car models to the market starting 2017. At the same time it plans to introduce plug-in hybrid versions for most of the standard models already being in production.
Volkswagen	In January 2016, VW's CEO confirmed a fundamental realignment of the group towards electric cars after its latest emission scandal, announcing that there will be at least 20 electric or plug-in hybrid vehicles in the VW Group's model range by 2020 (including Seat, Audi and Skoda).
BMW	Have embarked on a radical engineering overhaul which could see all future models from the 3-series upwards become all-wheel drive range extender electric cars, a technology already present in its recently introduced i3 and i8 models.
GM	Is introducing the all electric Chevrolet Bolt in 2017. This car, which is considered to be the first true mass market electric car, will cost around $30,000 and have a 320 km range. Its battery can be charged to 80% in under an hour.
VOLVO	Will be adding plug-in hybrid vehicles across its entire model range. In addition it is developing a whole new line of electrified smaller cars and will build an all-electric car by 2019. The company expects 10% of its global sales to be electric by 2020.
BYD Build Your Dreams	Initially a producer of rechargeable batteries has rapidly developed its New Energy Vehicle and ESS business, becoming the world's largest manufacturer of (plug-in hybrid) electric vehicles by 2015. The company, backed by Warren Buffet's Berkshire Hathaway Inc. is looking to invest in a number of battery production plants which would bring its total capacity to around 34 GWh of ESS and vehicle batteries by 2020, in line with Tesla's intended capacity at its US$5 billion Gigafactory.
RENAULT NISSAN	The Renault-Nissan alliance has committed around US $5.2 billion into its EV and battery development programs, aiming to become the global leader in zero-emission transportation. Until late 2015, when BYD took over in volume sales, the alliance was the world's largest electric vehicle manufacturer.
MITSUBISHI	The Mitsubishi Outlander was Europe's top selling plug in car in 2015. The company is currently scheduled to launch another three new SUV models as PHEV and EV before 2020.
PORSCHE	Is investing €1 billion on production facilities to produce its first all-electric sports car. At the same time is aiming to have plug-in hybrid versions of all its models available in the foreseeable future, including a plug-in hybrid of the 911 model which will hit the market by 2018.
ASTON MARTIN	The company, a symbol for all things V-12, confirmed it will launch an all-electric Rapide by the end of 2017 and the first plug-in hybrid model soon thereafter. Aston Martin's CEO recently stated that the entire industry will move to electricity as the diving costs of building electric cars coupled with ever increasing emission standards are quickly eroding the advantages of the traditional petrol engine.
Google	Whilst not formally announced, it has become an 'open secret' that both Google and Apple are developing a full electric vehicle. It is believed that Apple is targeting a market introduction by 2019.

Source: Battery Materials Fund – Portland Capital, LLC

As well as embracing all types of EV's, China is adopting a strategy to broaden the use of renewable energy to combat air pollution and is one of the lead global drivers for making a push towards 'greener power solutions' which in turn is having a direct impact on demand for energy storage systems (ESS's) at the residential and commercial level. Material renewable energy targets, such as 50% in California and 45% in Germany by 2020 are accelerating the demand for ESS's.

ESS's are enabling households and / or entire communities to store electrical energy when it is inexpensive during the day by means of solar cells and consume it in expensive peak periods such as the early evening. This form of energy storage creates multiple benefits in the form of lower power bills for consumers and reduced capital and maintenance costs for the network, while at the same time reducing carbon emissions and achieving environmental targets and goals. Battery size in this segment varies greatly from modular domestic units (e.g. Enphase Inc modular batteries @ 1.2KWh) to massive commercial scale battery banks totaling a GWh.

Panasonic estimates a compound annual growth rate (CAGR) of 16.5% in demand for EV batteries out to 2020. It forecasts a CAGR of ~70% for ESS batteries over the same period, although it should be noted that this is off a much lower base.

5.2.10 Potential Cobalt Projects – Impact

Recent (2009–2015) cobalt price weakness has been responsible for the lower level of investment committed to existing or new mines. Examining all potential mine openings/expansions over 2016–

2018F, there is expected be 23,000t gross of potential new supply (representing a 7.6% production growth rate 2016–2018F). Despite the positive numbers, it is considered highly unlikely all of this tonnage will actually be delivered to the market (typically a fraction of new production targets are met).

On a net supply basis, (including existing supply curtailments) the cobalt market is forecast to grow (2015-2018F) by only 2.4% CAGR and (2015–2020F) 3.5% CAGR, a more modest supply picture. In 2016, the main projects are Etoile Leach SX–EW plant in the DRC, Nova Nickel in Australia, and Idaho Cobalt (now called e-cobalt) in the US, with a combined capacity of 6,875t.

Existing producers are unlikely to increase production of cobalt without an increase in the nickel or copper price, due to cobalt being a by-product of these primary metals. Weak prices in these two primary metals result in lower production of all three metals.

5.2.11 The Future for the Cobalt Price

When cobalt is in demand (which it currently is due to the growing demand for lithium-ion batteries) perceived supply-side constraints add incremental upward pressure on the price. This in turn creates a desire on the part of consumers to lock in supplies at favourable prices, while also encouraging new exploration to take place.

The present future for the price cobalt is positive with upside risks outweighing downside risks.

Potential upside factors include:

- Better than expected demand for EV's;
- A major shift in battery technology in China to NCA and NMC Li-ion batteries;
- New Li-ion applications;
- Large-scale investment pouring into Li-ion battery manufacturing capacity as well as the low and falling cost per KWh;
- Disruption to DRC mine projects, for example political instability;
- Continued low / uncertain nickel and copper prices;
- A crackdown on artisanal mining;
- Delay in the ramp-up of refined chemical plants;
- Tightness in the refined metals and closures of additional refineries, for example nickel refineries where cobalt produced as a by-product; and
- China's per capita consumption increases.

Potential downside factors include:

- Improvement in especially nickel prices leading to a cobalt oversupply;
- A major shift in battery technology, particularly the EV sector, with a move to LFP Li-ion batteries in China;
- Cheap oil and gas;
- Substitution of cobalt by a more readily available element in cathodes; and
- Cobalt prices go too high, making end products such as EV's too expensive, causing the destruction of the cobalt chemicals industry.

Differing policies by Indonesia and the Philippines affecting nickel production (which are both key suppliers) have in recent years contributed to the cobalt price and the supply and demand cycle, from by-product production. In 2014, Indonesia banned the export of mineral ores with the aim of encouraging mining companies to build smelters within Indonesia. This decision led to mining companies stockpiling ore concentrates and even putting operations on care and maintenance, however in early 2017 the Indonesian government relaxed the export ban, but only for companies that were building smelters, for a period of 5 years, with restrictions on the grade of the ore, scaled to the progress of the mining company's smelter project. Refined nickel on the London Metal Exchange fell after the export ban was relaxed, however prices have rallied since the Philippines said it was going to close mines.

In early 2017, the Philippines government ordered the closure of 23 mines, mainly nickel producers, that account for ~50% of the country's annual nickel output, which analysts estimate at ~10% of world supply, in a government campaign to fight environmental degradation by the industry. The full fall out from this decision is yet to be seen and like the Indonesian decision, it could by relaxed and modified in the future, however by far the biggest impact for the cobalt price will be related to activities and political instability in the DRC.

5.3 Ore Deposit styles and processing options

In the last 10 – 20 years there have been many significant technical developments in the processing of copper-cobalt and nickel-cobalt ores. Together, these developments have helped to satisfy a steadily increasing world demand for cobalt. There is a wide range of cobalt recovery processes available, although each has pro's and con's. The following information is largely sourced from Fisher (2011), Bateman Engineering Projects.

5.3.1 Nickel Sulphides

In general, production of nickel from sulphide ores involves either open cut or underground mining. Nickel sulphide deposits have historically been processed by flotation, followed by smelting to produce a Platinum Group Metal (PMG)-bearing nickel matte which is shipped to specialist refineries using hydrometallurgical processes to recover the nickel, copper, PGMs and cobalt. It is common for mines, smelters and refineries to be in different locations, depending on local geographic factors. The processing of sulphide ores in this manner is known as pyrometallurgy. There are many such refinery processes including:

- ammonia leach, e.g. the Sherritt-Gordon process which produces LME grade nickel briquettes and cobalt by means of hydrogen reduction;
- a "modified" Sherritt-Gordon process (pressure oxidation leach), e.g. Impala BMR, South Africa.
- sulphate oxidative leach, e.g. Outokumpu;
- chlorine leach as practiced at Xstrata Nikkelwerk (ex Falconbridge/Kristiansands) where the cobalt is recovered by chloride electrowinning (see below);
- electro-refining of nickel matte anodes (Jinchuan and Inco, Thompson);
- electro-refining of impure metal (Russia).

Environmental pressure on the matte smelting operations has led to the development of wholly hydrometallurgical alternatives and now the scarcity of new economic nickel sulphide deposits is shifting the nickel development focus onto laterites.

5.3.1.1 Sherritt-Gordon Process (after Woodward, 2014)

The Sherritt-Gordon process was developed in the early 1950's by Forward and Mackiw. The process is an ammoniacal pressure leaching operation that is employed to recover value metals from nickel-copper-cobalt-iron sulphide concentrates and mattes. Metal recovery from sulphides via the Sherritt-Gordon process has been put into practise at only two industrial sites: the Fort Saskatchewan refinery of Sherritt International Corporation (formerly Sherritt Gordon Mines Limited) and the Kwinana nickel refinery. The Fort Saskatchewan nickel refinery is located in Fort Saskatchewan, Alberta, and was commissioned in 1954. This refinery initially processed a nickel concentrate mined at Lynn Lake, Manitoba, but presently refines a (predominant) nickel-cobalt mixed sulphide feed that is derived from processing a low magnesium, limonitic laterite ore. The Fort Saskatchewan refinery was the basis of construction of the Kwinana refinery, south of Perth in Western Australia, which initially processed a nickel concentrate mined at Kambalda, Western Australia, before converting to matte. The changes in feed material have led to some modifications in the physical structure, chemistry and operation of the leaching processes at each refinery, relative to the foundation design of Forward and Mackiw. The industrial sites thus not only operate their processes in a manner differing that with which they were originally intended, but do so in a fashion unlike one another to the point where, given the degree of process modifications at the Fort Saskatchewan refinery, the Kwinana refinery is now probably the only one of the two that can be said to operate the "Sherritt-Gordon process".

5.3.2 Nickel Laterites

Nickel production from laterite ores is relatively complex. Laterite mines are all open cut, due to the large area and shallow nature of the ores, and commonly apply a basic beneficiation to ore before processing (flotation is generally unsuitable). Laterites were processed almost exclusively by pyrometallurgy until 1954 when Nicaro, Cuba started up, employing the Caron process; followed by Moa Bay, Cuba in 1959 employing high-pressure acid leach (HPAL). HPAL involves high pressure acid leaching where the ore is leached with sulphuric acid at high pressures (up to 5.4 MPa) and high temperatures (245 to 270°C) in a titanium-clad autoclave. Solid-solution separation is subsequently carried out through counter current decantation, and the metal-rich solutions fed to a solvent extraction (hydrometallurgical) facility. Recent laterite projects commonly vary at this stage, some operating a nickel refinery to produce pure metal, while some produce an intermediate nickel hydroxide (or even sulphide) product for export to a refinery.

These hydrometallurgical processes have the benefit of recovering cobalt, which the pyrometallurgical processes did not do, therefore since circa 1974 there has been a growing trend towards hydrometallurgy for processing the higher-grade laterites (normally the cobalt-containing limonites), to the benefit of world cobalt output. The current preferred process is HPAL combined with a variety of nickel and cobalt production processes. Examples of this are Bulong, Cawse and Murrin Murrin (all commenced in 1999), Coral Bay (2005), Ravensthorpe (2007), Goro (2010) and Ambatovy, Madagascar (2011).

The traditional Caron process employs a reducing roast followed by ammoniacal leach; e.g. Yabula, Australia, which produces cobalt as an oxy-hydroxide cake using steam stripping. There are several Caron installations worldwide, but the process is less popular nowadays due to high energy requirements (and therefore cost) and low recoveries. Over the years, improvements to autoclave design detail and ancillary equipment have progressively facilitated the treatment of laterites by HPAL in preference to the Caron process or pyrometallurgical processes – as demonstrated in the recent Australian projects, albeit with varying degrees of success, with the difficulties experienced by the Australian HPAL projects stimulating a continuing search for other hydrometallurgical laterite processes.

A major difference between laterite and sulphide processing is that the sulphide ores are amenable to beneficiation producing high-grade concentrates (10 to 26 % Ni). This reduces both the size of the processing facilities (especially the front-end processing facilities) and overall processing costs for the sulphides. Only a limited upgrading (by a factor of <3, but mostly <2) can be carried out with laterite ores. This means a large tonnage of feed material is processed and a large tonnage of tailings or slag is disposed. Laterite projects have generally high capital costs and laterite smelters have high energy costs. Economics of the laterite projects are very sensitive to feed grade to the plant (after upgrading). Dalvi *et al*., (2004), estimated that an economic project would have at least 40kt nickel per year capacity requiring 800kt (~2 billion pounds) of nickel deposit for a mine life of 20 years.

The history of laterite projects has generally not been encouraging. Many projects have closed down, were restructured, or had economic difficulties (refer to

Table 5). Cash operating costs for laterite operations have been optimistically projected to be low but this has not come to pass, however, with new projects and more experience, the operating costs (net of by-product credits) can be expected to decline. Experience of the nickel industry (especially the laterite nickel industry) has shown that greenfield capacity requires a significantly higher price of nickel for the producers to obtain a reasonable return on equity (i.e. greater than the cost of borrowing). It also requires tolerance for risk. Laterite projects are generally in remote areas requiring high investment in infrastructure. Going forward, the social and environmental burdens on all mining projects are going to be significant.

A major concern with the increasing proportion of laterite nickel is that, although technology such as HPAL now exists to make processing of laterite ores more viable (technically and financially), it is widely perceived to be at a higher environmental cost.

Table 5 Nickel Laterites Processing Issues

ACID LEACHING	CARON PROCESS
Ore Composition (Mg, Al)	Ore Composition (Si, Ni)
Acid Consumption	High Initial Capital Costs
High cost	Mechanical Liability*
Technology Risk	Process Liability*
Effluent Treatment	Poor Cobalt Recoveries
Tailings Disposal	Energy (Drying & Roasting)

**These are due to high temperatures and complexity*

5.3.3 Recovery from Copper-Cobalt Oxide Concentrates

The ore is comminuted and the cobalt rich oxides are separated by froth flotation. The cobalt-bearing concentrate is then mixed with lime and coal, and then melted in a reducing atmosphere. Iron and lighter impurities float to the surface as solid dross or are expelled from the melt as gas. The remaining liquid is composed of a heavier copper smelt containing approximately 5% cobalt that is processed for its copper and a lighter slag that is approximately 40% cobalt that is further refined by hydrometallurgical and electrolytic processing. Concentrations of cobalt oxide (Co3O4) may also be reduced by the aluminothermic reaction or with carbon in a blast furnace.

5.3.3.1 Cobalt Recovery from Copper Smelter Slag

A DC arc furnace process combined with hydrometallurgy was successfully implemented at Chambishi, Zambia in 1998 for recovery of cobalt from copper reverb slag (Jones *et al*., 2002), adding ~4,000tpa to world cobalt production. The DC arc furnace effects a selective reduction of cobalt and leaves the bulk of the iron in the slag. The cobalt alloy product is processed further by pressure leach.

5.3.4 Recovery from Cobalt Arsenide Ores

A variety of processes were in operation during the 20th century to process cobalt arsenide ores/concentrates. Many of these featured a roasting stage and most included pressure leach but, because of health and environmental issues, almost all have now closed down. Only the Moroccan source currently remains active although there are plans to restart soon in Canada and N. America. Arsenic containing concentrates are roasted in a fluidized bed to remove 60% to 70% of the arsenic present as arsenic oxide (As2O5). The roasted ores can be treated with hydrochloric acid and chlorine or with sulfuric acid to give a leach solution that can be purified by hydrometallurgical methods and from which cobalt can be recovered by electro refining or by carbonate precipitation. If hydrochloric acid is used then cobalt may be extracted using alamine 336 in meta-xylene. Cobalt can be extracted also using Cyanex® 272 phosphinic acid. When cobalt carbonate (CoCO3) is heated (calcined) above 400°C, it decomposes into carbon dioxide (CO2) and cobalt(II) oxide (CoO) and can be refined as an oxide concentrate.

5.3.5 Solvent Extraction (SX)

Solvent extraction (also known as liquid–liquid extraction or partitioning) is a method to separate a compound based on the solubility of its parts. This is done using two liquids that don't mix, for example water and an organic solvent. The first commercial SX application for cobalt/nickel separation was at Xstrata Nikkelverk (ex Falconbridge) in Norway in 1968. Since then SX has gradually become very popular in cobalt flowsheets, particularly the use of Cyanex®272 (which first became available in the early 1980s) to separate cobalt from nickel before cobalt electrowinning (EW). Many current cobalt projects are employing SX for impurity removal, even to the extent of having three or four SX sections in series – each using a different reagent.

5.3.5.1 Solvent Extraction Problems

SX is often a preferred process for impurity removal and cobalt separation, since it can be elegant and very efficient if properly controlled, however, a serious problem with cobalt SX, especially on larger plants, is the need for pH control in the extraction stage which necessitates the use of sodium-based neutralising agents such as NaOH and Na2CO3. The resulting highly soluble sodium sulphate ultimately reports to the plant aqueous effluent and tailings dam and nowadays this is deemed to be an unacceptable environmental risk requiring the (expensive) lining of the dam or (very expensive) recovery of sodium sulphate. The alternative use of ammonia (NH4OH) gives rise to similar problems. These problems are perhaps more manageable on smaller plants.

Similarly, the inherent problems of oxidation, degradation and crud formation are manageable on small plants but less so on the larger plants. Note also that the cobalt-nickel SX reagents such as Cyanex®272 are relatively expensive and mishaps can be costly. The obvious drawback of any SX process is the fire risk and the high cost of prevention measures. Furthermore, because of the fire risk, any SX plant must be located well apart from the rest of the plant – sometimes placing constraints on lay-out and floor area.

5.3.6 Cobalt Electrowinning (EW)

Electrowinning is the recovery of metals from solution by passing a current through the solution. Electrons from the current chemically reduce the metal ions, to form a solid metal compound on the cathode. According to Fisher (2011), many current cobalt projects have elected to produce cobalt as cathode but not all appreciate how difficult it is to make quality cobalt cathode in large quantities. Apart from the extensive solution purification requirements, the fundamental practical problem is the highly-stressed nature of the cobalt that plates onto the stainless steel cathode blanks. The stress increases with deposition time and other factors until the deposit suddenly exfoliates or "peels" itself off the blank, with disastrous consequences for the EW cell.

5.3.7 Whole Ore Leach Concept

Direct whole ore leach (WOL), as opposed to the traditional but inefficient oxide ore flotation and concentrate leach, is now being applied to many copper oxide ores particularly those in the revitalized DRC. At current metal and acid prices, the much improved metal recoveries more than off-set the cost of the additional acid needed in the leach. It should however be noted that WOL requires a plentiful supply of cheap sulphuric acid, which has fortunately been the case thanks to the large amount of cheap elemental sulphur available as a by-product of the Middle East and Canadian oil industries (Fisher, 2011). The WOL process features in four of the eight current DRC projects, responsible for some 28,000tpa potential new cobalt capacity (i.e. half of current world demand).

5.3.8 Other Cobalt Products and Processes

5.3.8.1 Briquettes – Hydrogen Reduction

Cobalt metal (powder or briquettes) can be produced by hydrogen reduction in an autoclave. The process is well-known and is usually associated with the up-stream process (e.g. Sherritt). EW is however, normally preferred on account of lower capital and operating costs, higher metal recovery, and easier and less stringent operability and maintenance.

5.3.8.2 Cobalt Sulphate – Crystallisation

Cobalt sulphate is produced via evaporation/crystallisation and can be a high-value product if it is good grade, however the grade is entirely dependent on the extent of upstream purification (notably manganese and magnesium removal). Gypsum contamination and scaling can also be a problem. Crystallisation is a relatively complex process to operate; energy costs are major and it is maintenance intensive. The practical advantage is that no reagents are needed.

5.3.8.3 Hydroxy-oxides – Strong Oxidants

Nickel is more difficult to oxidise that cobalt therefore a number of processes exist that aim to oxidise and precipitate cobalt in preference to nickel. Strong oxidants such as ozone, Caro's acid, ammonium persulphate or even chlorine can be used. Such processes are specialised and should be considered

only in an environment where the safety issues can be managed. Poor Co/Ni selectivity can be a problem and SX would normally be preferred.

5.4 Conclusion

Overall there is a healthy demand worldwide for cobalt as the rechargeable battery and superalloy industries grow, with batteries accounting for 50% of cobalt demand and growing, along with the clear momentum that the EV market is continuing to generate.

New projects are expected to boost cobalt mine production, but the timing of these projects ultimately relies on nickel and copper prices. Current producers of these primary commodities will not produce more primary product to increase cobalt production without a rise in the nickel or copper prices, due to cobalt being a by-product of these primary metals. Therefore, mines with cobalt as their primary metal will have a greater control over their cost structure over the differing phases of commodity cycles.

Cobalt prices are anticipated to increase to 2021 due to strong demand growth and potential supply disruption, with upsides outweighing downsides. Artisanal mining activity is responsible for over 10,000t of cobalt annually from the DRC, a clamp down on this activity will lead to a supply shortage.

Despite the many developments, there is no entirely satisfactory or obvious flowsheet for cobalt recovery. The choice of process steps is often driven mostly by the project owner's requirements in terms of cobalt product and grade, and is constrained by other factors such as environmental compliance, logistics and risk. There have been major developments in the field of SX and it is a popular process, however Fisher (2011) has noted that there are significant problems to be considered.

Cobalt product selection is an important issue in new projects. Because of the relatively high value of cathode metal, many projects are planning to install electrowinning facilities, although some are conservatively electing to produce only an intermediate precipitate initially. Cobalt electrowinning is fraught with practical difficulties.

Ultimately, the opportunity exists for well-placed cobalt producing projects, producing a quality product, to be successfully developed to fill a gap in future demand growth. This is therefore, a unique opportunity for projects with cobalt as the primary metal, as they have more control over their cost structure and are not exposed to fluctuations in copper and nickel prices.

6.1 Introduction

An investment in the Company will be exposed to a number of risks.

Risks that the Directors believe are key risks are described below in Sections 6.2 to 6.30 (both inclusive).

The key risks are the risks that senior management and the Directors focus on when managing the business of the Company and have the potential, if they occurred, to result in significant consequences for the Company and an investment in it.

There are also risks that are common to all investments in shares and which are not specific to an investment in the Company; for example, the general volatility of share prices including as a result of general economic conditions (including monetary and fiscal policy settings as well as exchange and interest rates) in Australia and elsewhere and other events outside the usual course of the Company's business such as acts of terrorism or war.

Investors should note that the occurrence or consequences of some of the risks described in this section of the Prospectus are partially or completely outside the control of the Company, its Directors and senior management. Further, investors should note that this description focuses on the risks referred to above and does not purport to list every risk that the Company may have now or in the future. It is also important to note that there can be no guarantee that the Company will achieve its stated objectives or that any forward-looking statements or forecasts contained in this Prospectus will be realised or otherwise eventuate.

Investors should satisfy themselves that they have a sufficient understanding of these matters, including the risks described in this Section 6 of the Prospectus, and have regard to their own investment objectives, financial circumstances and taxation position before investing in the Company. If you do not understand any part of this Prospectus, or are in any doubt as to whether to invest in the Securities or not, it is recommended that you seek professional guidance from your stockbroker, solicitor, accountant or other independent and qualified professional advisor before deciding whether to invest.

6.2 Newly incorporated

The Company was incorporated on 6 March 2017. Accordingly, it has no operating history and is in the process of establishing processes and procedures required to ensure compliance as a listed public company. An investment in the Company is therefore speculative.

No assurance can be given that the Company will achieve commercial viability through the successful exploration of the Project. Until the Company can realise value from its projects, it is likely to incur ongoing operating losses.

6.3 Conditionality of the Offer

The obligation of the Company to issue the Securities under the Offer is conditional on certain matters, set out in Sections 2.1 and 7.1. If the conditions are not satisfied, the Company will not proceed with the Offer. Failure to complete the Offer may have a material adverse effect on the Company's financial position.

6.4 No profit to date

Since the Company intends to invest in the exploration development of the Project, the Directors anticipate that the Company will make losses in the foreseeable future.

Although the Directors have between them significant operational experience, the Company's ability to meet its objectives will be largely reliant upon the Company's ability to implement its current operational plans and take appropriate action to amend those plans in respect of any unforeseen circumstances that may arise. Investors should consider the Company's prospects in light of its limited financial history.

6.5 Operational risks

The operations of the Company may be affected by various factors including failures in internal controls and financial fraud. To the extent that such matters may be in the control of the Company, the Company will mitigate these risks through management and supervision controls. In addition, as the Company is newly formed, the procedures and processes specific to the Company are newly implemented or in the process of development.

In addition, the investments of the Company may be affected by various factors which are beyond the control of the Company, including adverse weather conditions, industrial and environmental accidents, industrial disputes and unexpected shortages or increases in the costs of consumables, plant and equipment, fire, explosions and other incidents beyond the control of the Company.

6.6 Reliance on Company's management and key personnel

The Company's business and future success heavily depends upon the continued services of management and other key personnel. If one or more of the Company's management or key personnel were unable or unwilling to continue in their present positions, the Company might not be able to replace them easily or at all. The Company's business may be severely disrupted, its financial condition and results of operations may be materially adversely affected, and it may incur additional expenses to recruit, train and retain personnel.

6.7 Exploration and development

Mineral exploration and development is a speculative and high-risk undertaking that may be impeded by circumstances and factors beyond the control of the Company. Success in this process involves, among other things:

(a) discovery and proving-up, or acquiring, an economically recoverable resource or reserve;

(b) access to adequate capital throughout the acquisition/discovery and project development phases;

(c) securing and maintaining title to mineral exploration projects;

(d) obtaining required development consents and approvals necessary for the acquisition, mineral exploration, development and production phases; and

(e) accessing the necessary experienced operational staff, the applicable financial management and recruiting skilled contractors, consultants and employees.

As the Company, post-Acquisition, will be an early stage exploration company, there can be no assurance that exploration on the Project, or any other exploration properties that may be acquired in the future, will result in the discovery of an economic mineral resource. Even if an apparently viable mineral resource is identified, there is no guarantee that it can be economically exploited.

The future exploration activities of the Company may be affected by a range of factors including geological conditions, limitations on activities due to seasonal weather patterns, unanticipated operational and technical difficulties, industrial and environmental accidents, changing government regulations and many other factors beyond the control of the Company.

6.8 Litigation

The Company is subject to litigation risks. All industries, including the minerals exploration industry, are subject to legal claims, with and without merit. Defence and settlement costs of legal claims can be substantial, even with respect to claims that have no merit. Due to the inherent uncertainty of the litigation process, the resolution of any particular legal proceeding to which the Company is or may become subject could have a material effect on its financial position, results of operations or the Company's activities.

6.9 Agents and contractors

The Company intends to outsource substantial parts of its exploration activities pursuant to services contracts with third party contractors. The Company is yet to enter into all of these formal arrangements. The Directors are unable to predict the risk of financial failure or default or the insolvency of any of the contractors that will be used by the Company in any of its activities or other managerial failure by any of the other service providers used by the Company for any activity. Contractors may also underperform their obligations of their contract, and in the event that their contract is terminated, the Company may not be able to find a suitable replacement on satisfactory terms.

6.10 Conditions to Tenements

Interests in tenements in the Northern Territory are governed by legislation and are evidenced by the granting of leases and licences by the Territory. The Company, post-Acquisition, will be subject to the Minerals Titles Act in the Northern Territory and the Company will have an obligation to meet conditions that apply to the Tenements, including the payment of rent and prescribed annual expenditure commitments.

The Tenements in which the Company will acquire an interest (subject to Completion occurring) are subject to annual review and periodic renewal. While it is the Company's intention to satisfy the conditions that apply to the Tenements, there can be no guarantees made that, in the future, the Tenements that are subject to renewal will be renewed or that minimum expenditure and other conditions that apply to the Tenements will be satisfied. Renewal conditions may include increased expenditure and work commitments or compulsory relinquishment of areas of the Tenements comprising the Project. These events could have a materially adverse effect on the Company's prospects and the value of its assets.

If a licence holder fails to comply with the terms and conditions of a licence, there is a range of penalties and offences under the Mineral Titles Act which may apply.

6.11 Grant of future authorisations to explore and mine

If the Company discovers an economically viable mineral deposit that it then intends to develop, it will, among other things, require various approvals, licences and permits before it will be able to mine the deposit. There is no guarantee that the Company will be able to obtain all required approvals, licences and permits. To the extent that required authorisations are not obtained or are delayed, the Company's operational and financial performance may be materially adversely affected.

6.12 Results of studies

Subject to the results of exploration and testing programs to be undertaken, the Company may progressively undertake a number of studies in respect to the Project. These studies may include scoping, pre-feasibility, definitive feasibility and bankable feasibility studies.

These studies will be completed within parameters designed to determine the economic feasibility of the Project within certain limits. There can be no guarantee that any of the studies will confirm the economic viability of the Project or the results of other studies undertaken by the Company (e.g. the results of a feasibility study may materially differ to the results of a scoping study).

Even if a study confirms the economic viability of the Project, there can be no guarantee that the Project will be successfully brought into production as assumed or within the estimated parameters in the feasibility study (e.g. operational costs and commodity prices) once production commences. Further, the ability of the Company to complete a study may be dependent on the Company's ability to raise further funds to complete the study if required.

6.13 Expenditure risk

Expenditure may need to be incurred that has not been taken into account in this Prospectus. Although the Company is not currently aware of any such additional expenditure requirements, if such expenditure is subsequently incurred, this may adversely affect the expenditure proposals of the Company and its proposed business plans.

6.14 Future funding

The funds raised under the Offer are considered sufficient to meet the immediate objectives of the Company. Further funding may be required by the Company in the event costs exceed estimates or revenues do not meet estimates, to support its ongoing operations and implement its strategies. For example, funding may be needed undertake further exploration activities, or acquire complementary assets.

Accordingly, the Company may need to engage in equity or debt financings to secure additional funds. Any additional equity financing may be dilutive to Shareholders, may be undertaken at lower prices than the Offer price or may involve restrictive covenants that limit the Company's operations be business strategy.

There can be no assurance that such funding will be available on satisfactory terms or at all at the relevant time. Any inability to obtain sufficient financing for the Company's activities and future projects may result in the delay or cancellation of certain activities or projects, which would likely adversely affect the potential growth of the Company.

6.15 Restricted securities reducing liquidity and expiry of escrow

Subject to the Company being admitted to the Official List, certain Shares on issue prior to the Offer will be classified by ASX as restricted securities and will be required to be held in escrow for up to 24 months from the date of Official Quotation. During the period in which these securities are prohibited from being transferred, trading in Shares may be less liquid which may impact on the ability of a holder to dispose of its Shares in a timely manner. An illiquid market for the Shares is likely to have an adverse impact on the Share price.

The Company will announce to ASX full details (quantity and duration) of the Shares required to be held in escrow prior to the Shares commencing trading on ASX.

Following the end of any escrow periods, a significant number of Shares will become tradable on ASX. This may result in an increase in the number of Shares being offered for sale on market which may in turn put downward pressure on the Share price.

6.16 Currently no market

There is currently no public market for the Shares, the price of Shares is subject to uncertainty and there can be no assurance that an active market for the Shares will develop or continue after the Offer.

The price at which the Shares trade on ASX after listing may be higher or lower than the Offer price and could be subject to fluctuations in response to variations in operating performance and general operations and business risk, as well as external operating factors over which the Directors and the Company have no control, such as movements in mineral prices and exchange rates, changes to government policy, legislation or regulation and other events or factors.

There can be no guarantee that an active market in the Shares will develop or that the price of the Shares will increase.

There may be relatively few or many potential buyers or sellers of the Shares on ASX at any given time. This may increase the volatility of the market price of the Shares. It may also affect the prevailing market price at which Shareholders are able to sell their Shares. This may result in

Shareholders receiving a market price for their Shares that is above or below the price that Shareholders paid.

6.17 Contamination risks

The mineral exploration sector operates under Australian State and Federal environmental laws. The Company's operations may use hazardous materials and produce hazardous waste which may have an adverse impact on the environment or cause exposure to hazardous materials. Despite efforts to conduct its activities in an environmentally responsible manner and in accordance with all applicable laws, the Company may be subject to claims for toxic torts, natural resources damages and other damages. In addition, the Company may be subject to the investigation and clean-up of contaminated soil, surface water and groundwater. This may delay the timetable of the Project and may subject the Company to substantial penalties including fines, damages, clean-up costs or other penalties. The Company is also subject to environmental protection legislation, which may affect the Company's access to certain areas of its properties and could result in unforeseen expenses and areas of moratorium.

6.18 Metallurgy risk

When compared with many industrial and commercial operations, mining exploration projects are high risk. Each ore body is unique and the nature of the mineralisation, the occurrence and grade of the ore, as well as its behaviour during mining can never be wholly predicted. Estimations of a mineral deposit are not precise calculations, but are based on interpretation and on samples from drilling which represent a very small sample of the entire ore body. Reconciliation of past production and reserves, where available, can confirm the reasonableness of past estimates, but cannot categorically confirm accuracy of future projections.

The applications of metallurgical test work results and conclusions to the process design, recoveries and throughput depend on the accuracy of the test work and assumption that the sample tests are representative of the ore body as a whole. There is a risk associated with the scale-up of laboratory and pilot plant results to a commercial scale and with the subsequent design and construction of any plant.

6.19 Resource and reserve estimates

Whilst the Company, post-Acquisition, intends to undertake exploration activities with the aim of defining a resource, no assurances can be given that the exploration will result in the determination of a resource. Even if a resource is identified, no assurance can be provided that this can be economically extracted.

Resource and reserve estimates are expressions of judgement based on knowledge, experience and industry practice. Estimates which were valid when initially calculated may alter significantly when new information or techniques become available. In addition, by their very nature, resource and reserve estimates are imprecise and depend to some extent on interpretation which may prove to be inaccurate.

6.20 Land access

There is a substantial level of regulation and restriction on the ability of exploration and mining companies to have access to land in Australia. Negotiations with both native title and land owners/occupiers are generally required before the Company can access land for exploration or mining activities. Inability to access, or delays experienced in accessing, the land may impact on the Company's activities.

6.21 Native title and Aboriginal heritage

The *Native Title Act 1993* (Cth) (***NTA***) recognises and protects the rights and interests in Australia of Aboriginal and Torres Strait Islander people in land and waters, according to their traditional laws and customs. There is significant uncertainty associated with native title in Australia and this may impact operations and future plans. Native title can be extinguished by valid grants of land or waters to

people other than the native title holders or by valid use of land or waters. It can also be extinguished if the indigenous group has lost their connection with the relevant land or waters. Native title is not extinguished by the grant of mining leases, as they are not considered to be grants of exclusive possession. A valid mining lease prevails over native title to the extent of any inconsistency for the duration of the title. For tenements to be validly granted (or renewed) after 23 December 1996 the special "right to negotiate" regime established by the NTA must be followed.

In relation to tenements in which the Company has a conditional interest, or will in the future acquire an interest, there may be areas over which legitimate common law native title rights of Aboriginal Australians exist. If native title rights do exist, the ability of the Company to gain access to tenements (through obtaining consent of any relevant landowner), or to progress from the exploration phase to the development and mining phases of operations may be adversely affected.

Four native title determinations have been made with respect to areas that include the Tenements. Any future renewals of the Tenements will need to comply with the relevant "right to negotiate" provisions in the NTA. Please refer to the Solicitor's Report on Tenements in Section 10 for further details.

The Directors will closely monitor the potential effect of native title claims involving tenements in which the Company has or may have an interest.

6.22 Crown land

The land subject to the Tenements overlaps with Crown land, including pastoral, historical and general leases. Upon commencing mining operations on any of the Tenements, the Company may need to consider entering into a compensation and access agreement with the lease holders to ensure the requirements of the Mineral Titles Act are satisfied and to avoid any disputes arising.

6.23 Environmental risks

The Company is subject to a number of State and Federal laws and regulations regarding the protection of the environment. These laws and regulations set various standards regulating certain aspects of health and environmental quality and provide for penalties and other liabilities for the violation of such standards and establish, in certain circumstances, obligations to remediate current and former facilities and locations where operations are or were conducted. Significant liability could be imposed on the Company for damages, clean-up costs, or penalties in the event of certain discharges into the environment, environmental damage caused by previous occupiers or non-compliance with environmental laws or regulations. The Company proposes to minimise these risks by conducting its activities in an environmentally responsible manner, in accordance with applicable laws and regulations and where possible, by carrying appropriate insurance coverage.

6.24 Environmental impact constraints

The Company's exploration programs will, in general, be subject to approval by governmental authorities. Development of any of the Company's properties will be dependent on the relevant project meeting environmental guidelines and, where required, being approved by governmental authorities.

6.25 Rehabilitation of Tenements

In relation to the Company's proposed operations, issues could arise from time to time with respect to abandonment costs, consequential clean-up costs, environmental concerns and other liabilities. In these instances, the Company could become subject to liability if, for example, there is environmental pollution or damage from the Company's exploration activities and there are consequential clean-up costs at a later point in time.

6.26 Insurance risk

Insurance coverage of all risks associated with minerals exploration, development and production is not always available and, where available, the cost can be high. The Company will have insurance in place considered appropriate for the Company's needs. The Company will not be insured against all possible losses, either because of the unavailability of cover or because the Directors believe the premiums are excessive relative to the benefits that would accrue. The Directors believe that the insurance they have in place is appropriate. The Directors will continue to review the insurance cover in place to ensure that it is adequate.

6.27 Commodity price and exchange rate risks

The price for base metals will depend on available markets at acceptable prices and transmission and distribution costs. Any substantial decline in the price of base metals or an increase in transmission or distribution costs could have a material adverse effect on the Company.

Furthermore, international prices of various commodities are denominated in United States dollars, whereas the income and expenditure of the Company are and will be taken into account in Australian currency, exposing the Company to the fluctuations and volatility of the rate of exchange between the United States dollar and the Australian dollar as determined in international markets.

6.28 Competition risk

The industry in which the Company will be involved is subject to domestic and global competition. Although the Company will undertake reasonable due diligence in its business decisions and operations, the Company will have no influence or control over the activities or actions of its competitors, which activities or actions may, positively or negatively, affect the operating and financial performance of the Company's projects and business.

6.29 Market conditions

Share market conditions may affect the value of the Company's quoted securities regardless of the Company's operating performance. Share market conditions are affected by many factors such as:

(a) General economic outlook;

(b) Introduction of tax reform or other new legislation;

(c) Interest rates and inflation rates;

(d) Changes in investor sentiment toward particular market sectors;

(e) The demand for, and supply of, capital; and

(f) Terrorism or other hostilities.

The market price of securities can fall as well as rise and may be subject to varied and unpredictable influences on the market for equities in general and resource exploration stocks in particular. Neither the Company nor the Directors warrant the future performance of the Company or any return on an investment in the Company.

Applicants should be aware that there are risks associated with any securities investment. Securities listed on the stock market, and in particular securities of exploration companies, experience extreme price and volume fluctuations that have often been unrelated to the operating performance of such companies. These factors may materially affect the market price of the Securities regardless of the Company's performance.

6.30 Regulatory risks

The Company's exploration and development activities are subject to extensive laws and regulations relating to numerous matters including resource licence consent, conditions including environmental

compliance and rehabilitation, taxation, employee relations, health and worker safety, waste disposal, protection of the environment, native title and heritage matters, protection of endangered and protected species and other matters. The Company requires permits from regulatory authorities to authorise the Company's operations. These permits relate to exploration, development, production and rehabilitation activities.

Obtaining necessary permits can be a time-consuming process and there is a risk that the Company will not obtain these permits on acceptable terms, in a timely manner or at all. The costs and delays associated with obtaining necessary permits and complying with these permits and applicable laws and regulations could materially delay or restrict the Company from proceeding with the development of a project or the operation or development of a mine. Any failure to comply with applicable laws and regulations or permits, even if inadvertent, could result in material fines, penalties or other liabilities. In extreme cases, failure could result in suspension of the Company's activities or forfeiture of one or more of the Tenements.

6.31 Investment speculative

The above list of risk factors ought not to be taken as exhaustive of the risks faced by the Company or by investors in the Company. The above factors, and others not specifically referred to above, may in the future materially affect the financial performance of the Company and the value of the Securities offered under this Prospectus.

Therefore, the Securities to be issued pursuant to this Prospectus carry no guarantee with respect to the payment of dividends, returns of capital or the market value of those Securities.

Potential investors should consider that investment in the Company is highly speculative and should consult their professional advisers before deciding whether to apply for Securities pursuant to this Prospectus.

7.1 Directors and key personnel

The Board of the Company consists of:

- Mr Leonard (Len) Dean (Non-executive Chairman)
- Mr Michael Schwarz (Managing Director)
- Mr Andrew Shearer (Non-executive Director)
- Mr Duncan Chessell (Non-executive Director)

Other senior management personnel are Mr Jarek Kopias as the Chief Financial Officer and Joint Company Secretary. Mr Jay Stephenson holds the position as Joint Company Secretary, however it is Mr Stephenson's intention to resign soon after Official Quotation.

Biographies for the Directors and senior management personnel are contained in Sections 3.3 and 3.4.

The Company is aware of the need to have sufficient management to properly supervise the exploration and (if successful) for the development of the projects in which the Company has, or will in the future have, an interest and the Board will continually monitor the management roles in the Company. As projects require an increased level of involvement, the Board will look to appoint additional management and/or consultants when and where appropriate to ensure proper management of the Project.

7.2 Disclosure of interests

The Company has paid no remuneration to its Board since incorporation to the date of this Prospectus and no remuneration will be paid or accrue until the Company is admitted to the Official List.

For each of the Directors, the proposed annual remuneration for the financial year following the Company being admitted to the Official List together with the relevant interest of each of the Directors in the securities of the Company as at the date of this Prospectus is set out in the table below.

Director	Remuneration[1]	Shares	Founder Options	Performance Shares[2]
Mr Leonard (Len) Dean	$60,000	100,000	1,000,000	Nil Class A Nil Class B
Mr Michael Schwarz	$192,720	200,000	3,000,000	Nil Class A Nil Class B
Mr Andrew Shearer	$35,000	1,200,000	450,000	1,000,000 Class A 500,000 Class B
Mr Duncan Chessell	$35,000	6,533,750[3]	697,500	2,250,000 Class A 1,012,500 Class B

1. Includes statutory superannuation.
2. The issue of Performance Shares is subject to Completion occurring.
3. D Chessell will be deemed to have a relevant interest in the 6,500,000 Shares to be issued by the Company to Coolabah Group Pty Ltd as consideration for the acquisition of 100% of Mangrove, due to Mr Chessell's holding of 25% of the issued capital of Coolabah Group Pty Ltd.

7.3 Agreements with Directors and related parties

The Company's policy in respect of related party arrangements is:

(a) a Director with a material personal interest in a matter is required to give notice to the other Directors before such a matter is considered by the Board; and

(b) for the Board to consider such a matter, the Director who has a material personal interest is not present while the matter is being considered at the meeting and does not vote on the matter.

The agreements between the Company and related parties are summarised in Section 8.

7.4 Agreements with management

The Company has entered into an Employment Agreement with Mr Michael Schwarz to provide services to the Company for an ongoing period from the date that the Company is admitted to the Official List.

The agreement between the Company and Mr Schwarz is summarised in Section 8.

On 3 March 2017, the Company entered into a master services agreement with Mimko Pty Ltd (ACN 147 463 956) trading as Kopias Consulting (**Services Agreement**) under which Mr Jarek Kopias was engaged to provide the services of Chief Financial Officer and Company Secretary and related services to the Company. The Company has engaged Mr Kopias on an on-going, non-exclusive basis until the Services Agreement is terminated in accordance with its terms. The Services Agreement can be terminated by the Company on 30 days' written notice, by Mr Kopias on 14 days' written notice and by the Company on the occurrence of certain events of default. Mr Kopias can terminate the Services Agreement on seven days' written notice for the Company's failure to pay money due. Mr Kopias is paid a standard hourly rate depending on the nature of the services provided, and is reimbursed for expenses and travel outside Adelaide. Mr Kopias' liability under an indemnity given to the Company with respect to any loss and damage caused by him is limited to the value of the services giving rise to the liability.

Other than the related party transactions detailed in this Prospectus, there are no related party transactions in respect of the Company or its business.

7.5 Indemnification of Directors and officers

The Company, to the extent permitted by the Corporations Act, indemnifies each Director against any liability incurred by that person as an officer of the Company or its related bodies corporate, including as a liability incurred as a result of appointment or nomination by the Company or subsidiary as trustee or as an officer of another corporation, unless the liability arises out of conduct involving a lack of good faith.

The Company, subject to the Corporations Act, may enter into, and pay premiums on, a contract insuring a Director against any liability incurred by that person as an officer of the Company or its related bodies corporate.

Set out below is a brief summary of the certain contracts to which the Company is a party and which the Directors have identified as material to the Company or are of such a nature that an investor may wish to have details of particulars of them when making an assessment of whether to apply for Securities.

To fully understand all rights and obligations of a material contract, it would be necessary to review it in full and these summaries should be read in this light.

8.1 Share Sale Agreement

On or about 31 March 2017, the Company entered into a heads of agreement with the Vendor and Mangrove (HOA) whereby the Vendor granted the Company an option to acquire 100% of the issued shares in the capital of Mangrove (Mangrove Option). The Company paid to the Vendor an option fee of $28,000 in consideration for the grant of the Mangrove Option. The HOA was replaced and superseded by an Option and Share Sale Agreement (Share Sale Agreement) on or about 16 June 2017.

Relevantly, the Share Sale Agreement provides that the Company may exercise the Mangrove Option at any time following the execution of the Share Sale Agreement and prior to 31 December 2017 (Option Period). Upon exercise of the Mangrove Option, the Company and Vendor agree to the sale and purchase of 100% of the issued shares in Mangrove (being one fully paid ordinary share, Mangrove Share) (Acquisition). The consideration payable by the Company to the Vendor for the Acquisition comprises:

(a) 6,500,000 Shares (which will be subject to applicable escrow conditions);

(b) 10,000,000 Class A Performance Shares (which will be subject to applicable escrow conditions); and

(c) 4,500,000 Class B Performance Shares (which will be subject to applicable escrow conditions),

(Consideration Shares).

The exercise of the Mangrove Option is subject to satisfaction or waiver of conditions, including:

(a) the Company obtaining a conditional admission letter from ASX on terms and conditions that are reasonably acceptable to the Company;

(b) the Company's receipt of ASX approval of the terms of the Performance Shares for the purposes of ASX Listing Rule 6.1;

(c) the parties obtaining all necessary consents and approvals (including shareholders' and regulatory or third party approvals) necessary to give effect to the sale and purchase of the Mangrove Share;

(d) the Company receiving valid applications for the Minimum Subscription under the Prospectus;

(e) no breach of any Vendor warranty occurring before the earlier to occur of Completion and 31 December 2017;

(f) no material adverse effect occurring with respect to Mangrove or the Tenements before the earlier to occur of Completion and 31 December 2017;

(g) the Vendor, or its nominees, entering into such form of restriction agreements in respect of the Consideration Shares as is required by ASX; and

(h) written confirmation in a form reasonably acceptable to the Company that the Vendor has forgiven the shareholder loan to Mangrove of $38,675.48.

The parties have until 31 December 2017 (or such later date agreed to by the parties) to satisfy or waive the Conditions.

During the Option Period and until Completion, the Company has agreed, at its own cost, to maintain the Tenements in full force and to keep the Tenements in good standing (including paying all rents and outgoings).

During the Option Period and until Completion, the Vendor and Mangrove have covenanted with the Company that they will not (without the prior written consent of the Company, which may not be unreasonably withheld) do anything that will affect the ownership of the Tenements and related technical information (together, Mining Assets) (including disposal of the assets, creating encumbrances over the assets or incurring material liabilities with respect to the assets). Mangrove additionally covenants that it will not declare any dividends or vary its capital structure. In addition, the Vendor must disclose all correspondence, studies, and exploration results to the Company. The Vendor and Mangrove have also agreed to provide the Company with unrestricted access to the Mining Assets during the Option Period.

The Company has agreed to indemnify the Vendor and Mangrove against any claims connected with the negligence or breach by the Company of its obligations regarding keeping the Tenements in good standing (including its officers, agents or employees), or caused by or connected with any personal injury or death occurring on the Tenements which is connected with the Company's use of the Mining Assets at a time when the Company, or any of its officers, agents, employees or invitees, are present on or about the Tenements.

The Vendor has provided the Company with warranties in relation to the ownership of the Mangrove Share, the capital structure of Mangrove, the assets of Mangrove and the ownership, absence of encumbrances and good standing of the Tenements.

The remainder of the terms and conditions of the Share Sale Agreement are considered standard for an agreement of this nature.

8.2 Consultancy Agreement

The Company and the Vendor (as Consultant) entered into a consultancy agreement dated 14 April 2017 (**Consultancy Agreement**) in respect of exploration consulting, project management, geological services and business management services to be provided by the Vendor to the Company (**Services**). The key terms of the Consultancy Agreement are as follows:

(a) **Provision of Services**

(i) The Consultant is to provide the Services to the Company within South Australia (or elsewhere as requested and agreed) on a non-exclusive basis.

(ii) The Consultant is free to decide the manner in which the Services are delivered, but must ensure that the Services are provided in accordance with all applicable laws, regulations and industrial awards and agreements; all Company rules and regulations; and all lawful and reasonable directions given by the Company.

(iii) The Consultant may only delegate the provision of Services with the prior written consent of the Company.

(iv) The Consultant must ensure that:

(A) the Services match the description of the Services in the Consultancy Agreement or as otherwise requested in all material respects;

(B) the Services are performed by appropriately qualified and trained personnel within the time stipulated; and

(C) the Services, and any items used or supplied by the Consultant in conjunction with the provision of the Services, are fit for purpose.

(b) **Retainer and specific jobs**

(i) The Company is to engage the Consultant on a 6-month retainer to provide the Services. The Company may request to extend the term any number of times for any duration by giving written notice to the Consultant not less than 7 days prior to the expiry of the then current term.

(ii) From time to time the Company may offer to engage the Consultant on a specific job in addition to the initial 6-month retainer on terms to be agreed between the parties.

(c) **Consultancy fee**

The Company is to pay the Consultant $11,500 per month for the retainer.

(d) **Termination**

Either party may terminate the Consultancy Agreement immediately for breach of a material term (after failure to remedy the breach within a 14-day notice period) or on the occurrence of an insolvency-related event.

8.3 Lead Manager Mandate

The Company entered into a mandate agreement with PAC Partners Pty Ltd (**Lead Manager**) on 11 May 2017 pursuant to which the Lead Manager was appointed as lead manager to provide services to the Company with respect to the initial public offering of Shares (**IPO**) (**Lead Manager Mandate**). Under the terms of the Lead Manager Mandate, the Company will pay to the Lead Manager:

(a) **Capital Raising Fee:**

Upon the successful completion of the IPO, a capital raising fee of 6% of the total funds raised under the IPO will be payable to the Lead Manager out of the aggregate proceeds of the IPO;

(b) **Securities in the Company:**

Upon the successful completion of the IPO, the Lead Manager or its nominee shall be entitled to receive:

(i) *Promoter Options:* up to 6,500,000 Options exercisable at $0.25 (valid for 4 years); and

(ii) *Performance Shares:* performance-based shares in the Company issued in two tranches as detailed below and otherwise on the same terms and conditions as apply to such performance-based shares in the Company to be issued to the Vendor and as are detailed in full in Section 13.5:

(A) 2,000,000 Class A Performance Shares; and

(B) 1,000,000 Class B Performance Shares.

The capital raising fee shall be payable at completion of the IPO, out of the proceeds of the IPO, as appropriate.

The Lead Manager is entitled to be reimbursed for its reasonable costs and expenses associated with the performance of its services under the Lead Manager Mandate.

The Lead Manager has a right of first refusal, subject to completion of the Offer, to be appointed as lead or joint lead manager on any equity capital financing of the Company for a period ending 18 months after completion of the Offer.

8.4 Employment Agreement – Michael Schwarz

The Company has engaged Mr Schwarz as Managing Director on a full-time basis pursuant to an employment agreement dated 21 March 2017 (**Employment Agreement**). The key terms and conditions are as follows:

(a) **Term**

Mr Schwarz's employment will commence on the date the Company is admitted to the Official List and will continue until terminated in accordance with the Employment Agreement.

(b) **Remuneration**

(i) Mr Schwarz's annual remuneration package includes a salary component of $176,000 per annum, statutory superannuation and any other components agreed between Mr Schwarz and the Company.
(ii) Mr Schwarz's initial remuneration package is $192,700 per annum (inclusive of superannuation).
(iii) The Company must review Mr Schwarz's remuneration package in July each year (starting July 2017) and the Company may, in its discretion, increase his remuneration package for the following 12 months.
(iv) The Company will reimburse Mr Schwarz for any pre-approved expenses and will pay for all reasonable costs associated with his use of Company property.
(v) Mr Schwarz must serve and accept office in any Related Body Corporate of the Company as the Company requires, without additional remuneration.

(c) **Termination**

(i) The Company may terminate the Employment Agreement by providing Mr Schwarz 6 months' written notice and Mr Schwarz may do so on 3 months' written notice to the Company.
(ii) The Company may terminate the Employment Agreement without written notice in certain circumstances, including if Mr Schwarz breaches the Employment Agreement, becomes an insolvent under administration, becomes of unsound mind, is convicted of a criminal offence or is guilty of any serious misconduct or wilful neglect in performing his duties.
(iii) If the Company gives notice of termination, the Company may in its absolute discretion require Mr Schwarz to take garden leave for all or part of the notice period.

The Employment Agreement contains other terms and conditions that are considered standard for an agreement of this nature.

8.5 Non-Executive Director Agreements – Andrew Shearer, Duncan Chessell and Leonard Dean

The Company has entered into separate non-executive director letter agreements with each of Andrew Shearer, Duncan Chessell and Leonard Dean pursuant to which each party is to be appointed as a Non-Executive Director effective from 6 March 2017. Mr Dean was also appointed Chairman.

Messrs Shearer, Chessell and Dean are entitled to annual fees of $35,000, $35,000 and $60,000 respectively (inclusive of superannuation) from the date the Company is admitted to the Official List. Each Director is also entitled to reimbursement of expenses in accordance with the Company's constitution and, subject to approval by the Board, additional remuneration for extra services or special exertions as allowed for in the Company's constitution.

The period of appointment for each Director will be in accordance with the Company's constitution and the Corporations Act, including the provisions of the Company's constitution relating to retirement by rotation and re-election as a Director.

Mr Dean is an independent Director, whilst Messrs Shearer and Chessell are non-independent Directors.

8.6 Good Faith Protection and Access Deeds

The Company has entered into good faith, protection and access deeds with each Director and Company Secretary (**Deeds**). Under the Deeds, the Company agrees to indemnify each Director and Company Secretary to the extent permitted by law against any liability arising as a result of the Director or Company Secretary acting as a director or company secretary of the Company, unless the liability arises out of conduct involving a lack of good faith by the relevant Director or Company Secretary. The Company is also required to maintain insurance policies for the benefit of the relevant Director or Company Secretary and must allow the Directors and Company Secretary to access and inspect board papers in certain circumstances. The Deeds are considered standard for documents of this nature.

9.1 Composition of the Board

The Board is responsible for the overall corporate governance of the Company. The Board is committed to maximising performance, generating appropriate levels of Shareholder value and financial return, and sustaining the growth and success of the Company.

Election of Board members is substantially the province of the Shareholders in general meeting. However, subject to the rights of Shareholders in general meeting:

(a) membership of the Board will be reviewed regularly to ensure the mix of skills and expertise is appropriate; and

(b) the composition of the Board has been structured to provide the Company with an adequate mix of directors with industry knowledge, technical, commercial and financial skills together with integrity and judgment considered necessary to represent Shareholders and fulfil the business objectives of the Company.

The Board currently consists of 4 directors, three non-executive Directors and one executive Director of whom one is considered independent, being Mr Leonard Dean. The Board considers the current balance of skills and expertise is appropriate for the Company for its currently planned level of activity.

The Board undertakes appropriate checks before appointing a person as a Director or putting forward to Shareholders a candidate for election as a Director.

The Board ensures that Shareholders are provided with all material information in the Board's possession relevant to a decision on whether or not to elect or re-elect a Director.

The Company shall develop and implement a formal induction program for Directors which allows new directors to participate fully and actively in Board decision-making at the earliest opportunity, and enable new Directors to gain an understanding of the Company's policies and procedures.

9.2 Board charter

The Board charter sets out the functions and responsibilities of the Board.

9.3 Identification and management of risk

The Board's collective experience will enable accurate identification of the principal risks that may affect the Company's business. Key operational risks and their management will be recurring items for deliberation at Board meetings.

9.4 Ethical standards

The Board is committed to the establishment and maintenance of appropriate ethical standards.

9.5 Board responsibility and objectives

The Board develops strategies for the Company, reviews strategic objectives and monitors performance against those objectives. In general, the Board assumes the following responsibilities:

(a) providing leadership and setting the strategic objectives of the Company;

(b) appointing and when necessary, replacing the executive Directors and chief executive officer;

(c) approving the appointment and when necessary, replacement of other senior executives;

(d) undertaking appropriate checks before appointing a person, or putting forward to Shareholders a candidate for election, as director;

(e) overseeing management's implementation of the Company's strategic objectives and its performance generally;

(f) approving operating budgets and major capital expenditure;

(g) overseeing the integrity of the Company's accounting and corporate reporting systems, including the external audit;

(h) overseeing the Company's process for making timely and balanced disclosure of all material information concerning the Company that a reasonable person would expect to have a material effect on the price or value of the Company's securities;

(i) ensuring that the Company has in place an appropriate risk management framework, and setting the risk appetite within which the Board expects management to operate; and

(j) monitoring the effectiveness of the Company's governance practices.

In conducting business, the Board's objective is to ensure that the Company is properly managed to protect and enhance Shareholder interests, and that the Company, its Directors, officers and employees operate in an appropriate environment of corporate governance. Accordingly, the Board has created a framework for managing the Company, including adopting relevant internal controls, risk management processes and corporate governance policies and practices which it believes are appropriate for the Company's business and which are designed to promote the responsible management and conduct of the Company.

The Company's corporate governance principles and policies are structured with reference to the Recommendations, which are as follows:

Recommendation 1: Lay solid foundations for management and oversight

Recommendation 2: Structure the board to add value

Recommendation 3: Act ethically and responsibly

Recommendation 4: Safeguard integrity in corporate reporting

Recommendation 5: Make timely and balanced disclosure

Recommendation 6: Respect the rights of security holders

Recommendation 7: Recognise and manage risk

Recommendation 8: Remunerate fairly and responsibly

In light of the Company's size and nature, the Board considers that the current Board is a cost effective and practical method of directing and managing the Company. As the Company's activities develop in size, nature and scope, the size of the Board and the implementation of additional corporate governance policies and structures will be reviewed.

The Company's main corporate governance policies and practices as at the date of this Prospectus are outlined below and the Company's full corporate governance plan is available in a dedicated corporate governance information section of the Company's website (www.northerncobalt.com.au).

9.6 Audit and risk committee charter

The Company has established an audit and risk committee which operates under the audit and risk committee charter. The audit and risk committee charter sets out the role of the audit and risk committee which oversees the processes for financial reporting, internal control, financial and non-financial risk management, external audit and monitors the Company's compliance with laws, regulations and its own policies and evaluates the adequacy of processes and controls established to identify and manage areas of potential risk. The audit and risk committee is comprised of 3 non-executive Directors, 1 of whom is independent.

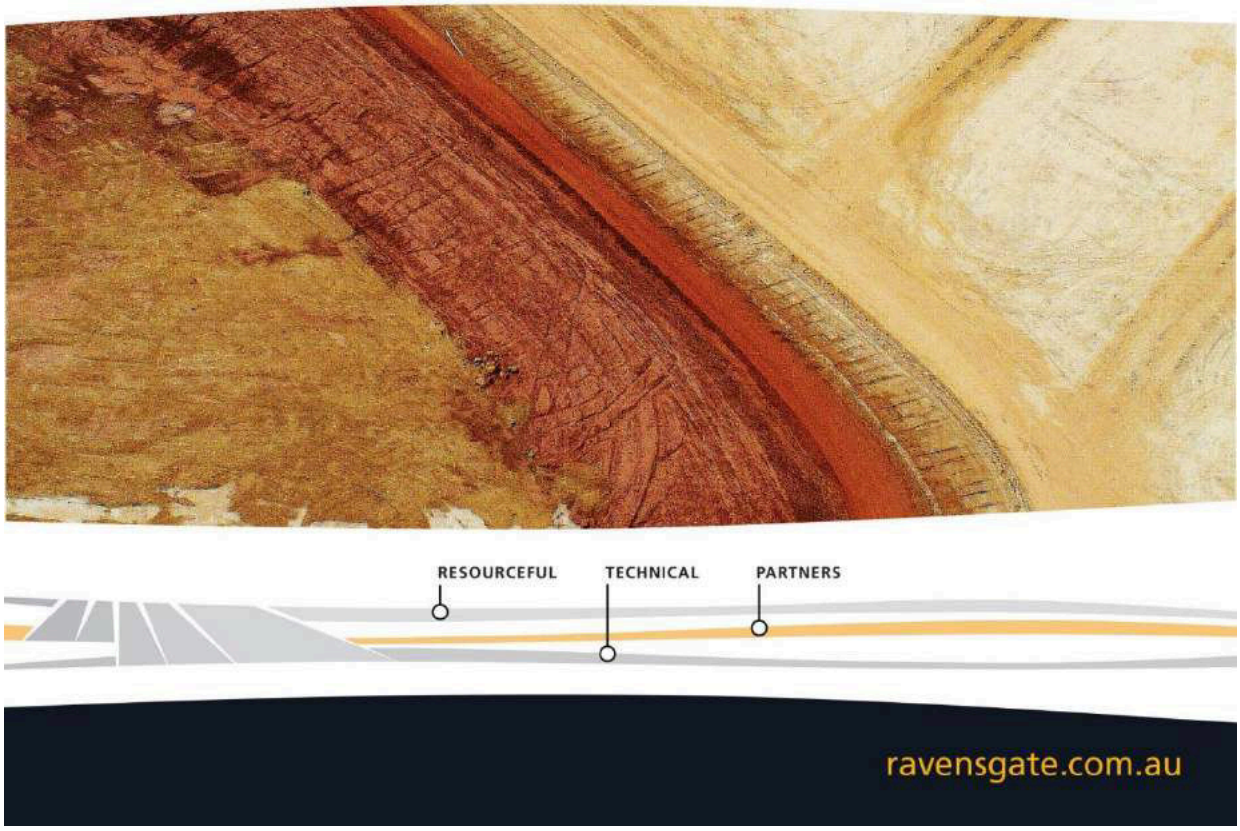
9.7 Departures from Recommendations

Under ASX Listing Rules, the Company will be required to provide a statement in its annual financial report or on its website disclosing the extent to which it has followed the Recommendations during each reporting period. Where the Company has not followed a Recommendation, it must identify the Recommendation that has not been followed and give reasons for not following it.

The Company's departures from the Recommendations will also be announced prior to admission to the Official List.

Ravensgate
Mining Industry Consultants

INDEPENDENT GEOLOGIST'S REPORT ON THE MINERAL ASSETS OF NORTHERN COBALT LIMITED 27 JUNE 2017



INDEPENDENT GEOLOGIST'S REPORT

Northern Cobalt

ON THE MINERAL ASSETS OF NORTHERN COBALT LIMITED

Prepared by RAVENSGATE on behalf of:

Northern Cobalt Limited

Author(s):	David Reid	Principal Resource Geologist	BSc Geology, MAppSc (Geological Data Processing – Geostatistics), MAusIMM, MAIG
	Alan Hawkins	Principal Consultant Geologist	BSc (Hons) Geology, MSc (Ore Deposit Geology), MAIG RPGeo, FSEG
Reviewer:	Neal Leggo	Principal Consultant	BSc (Hons) Geology, MAIG, MSEG

Date: 27 June 2017

Project No: NOR001 & NOR002

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David Reid
For and on behalf of:
RAVENSGATE

Alan Hawkins
For and on behalf of:
RAVENSGATE

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EXECUTIVE SUMMARY

Ravensgate International Pty Ltd ATF Ravensgate Unit Trust (Ravensgate) has been commissioned by Northern Cobalt Limited (NCL) to provide an Independent Geologist's Report (IGR) on the Mineral Assets of NCL. Ravensgate understands that NCL is seeking to list on the Australian Securities Exchange (ASX) and that this report is to be included in a prospectus (Prospectus) to be lodged by NCL with the Australian Securities and Investments Commission and may be relied upon by shareholders and potential investors.

The Wollogorang base metals project (Wollogorang) in the Northern Territory of Australia comprise the Mineral Assets of NCL. A map showing the location of the projects is presented in Figure 1, and a list of the tenements which comprise the Mineral Assets is detailed in Table 3 of this report.

Wollogorang Project

The Wollogorang cobalt-nickel-copper (Co-Cu-Ni) project is the principal asset of NCL. The project is located in the Wollogorang region of the Roper Gulf Shire in the Northern Territory of Australia, adjacent to both the Queensland border and the Gulf of Carpentaria (Figure 1 and Figure 2), located within the Wearyan Shelf tectonic element of the southeastern Palaeoproterozoic to Mesoproterozoic McArthur Basin. The McArthur Basin unconformably overlies the Palaeoproterozoic Pine Creek Orogen to the northwest, Murphy Inlier to the southeast and Arnhem Inlier to the northeast and is host to mineral deposits such as the McArthur River (HYC) zinc-lead-silver mine, the Westmoreland uranium deposit and is spatially associated with the uranium deposits of the Alligator Rivers region, including Ranger and Jabiluka. The basin also hosts numerous other occurrences of base metals, iron ore, manganese and uranium. The closest deposit is the Redbank copper deposit (3.5Mt @ 1.87% Cu) which is located ~50km to the south of the Stanton / Running Creek area.

The discovery of breccia pipes at Stanton in the late 1980's by WJ & EE Fisher Pty Ltd (Fisher), associated with limited but anomalous geochemical data and auger drilling, encouraged CRA Exploration Pty Ltd (CRAE) to enter into the Running Creek Farm-In and Joint Venture Agreement with Fisher, which commenced in 1990, with the aim of finding 'Redbank style' stratabound copper mineralisation. Results were disappointing for a large copper deposit, however assays results returned an exotic suite of metals indicating localised small pockets of cobalt and nickel with associated copper. This exotic metal suite led CRAE to persevere with exploring the cobalt – nickel association at Stanton, even though the deposit dimensions were much smaller than the criteria of their corporate strategy, until 1995 when the company returned to its core business of exploring for and developing major base metal deposits.

Stanton Deposit Mineral Resource Estimate

Ravensgate has developed a Mineral Resource estimate for the Stanton Deposit as part of this IGR. Data used in the estimate is based on drilling completed by CRAE from 1990 to 1995 comprised of 35 drill holes in and around the deposit. Limited metallurgical test work on the sulphide ore was also conducted by CRAE.

Mineralisation is interpreted to be largely controlled by stratigraphy within the flat lying interbedded sediment and volcanic rock units of the Proterozoic Gold Creek Volcanics. Brecciation and faulting has a strong control on the intensity and limits of mineralisation. In fresh rock the cobalt-nickel is located in disseminated siegenite (cobalt-nickel sulphide). Chalcocite and pyrite are also noted. Weathering to a variable depth of approximately 30m has resulted in cobalt oxide secondary mineralisation in a large proportion of the deposit.

Ravensgate developed a 3D geological model of the deposits using the stratigraphy and interpreted faults as the primary control on mineralisation and modelled a number of mineralisation domains based on a 500 ppm Co threshold. Mineralisation is interpreted to occur in the quartz arenite/mudstone and adjacent trachyte units. The main mineralisation zone has been down faulted in the central part of the deposit. A deeper horizon of mineralisation was modelled but this zone is thinner and of lower grade. Ordinary kriging was used to estimate the cobalt, nickel and copper grades into a block model using Vulcan software.

The resource estimates have been classified as Inferred Resources and reported in accordance with the JORC Code (2012 Edition) and is summarised in Table 1 below.

Table 1 Stanton Project Mineral Resource Estimates (JORC 2012)

Weathering	Volume (BCM)	Tonnage (Tonnes)	Cobalt (ppm)	Nickel (ppm)	Copper (ppm)
Sulphide	70,000	180,000	2,000	1,200	900
Oxide	140,000	320,000	1,600	700	1,300
TOTAL	210,000	500,000	1,700	900	1,100

Notes: Tonnage is report as dry tonnes (t)
Cut-off grade 500ppm Co
Rounding has been applied to appropriately reflect the precision of the estimate

Metallurgical test work on two samples from diamond drill hole (DD) core were conducted on the sulphide mineralisation. These suggest that cobalt sulphide concentrate could be produced with 70-75% recovery of cobalt. No test work was conducted on the oxide mineralisation. With a large part of the resource comprised of oxide, evaluation of the processing options for this material will have a large influence on the economics of the project.

Pit optimisation was used to evaluate the economics of the mining and processing. The study was based on producing a bulk concentrate at the nearby Redbank plant or a new plant constructed at Stanton. Metallurgical recovery of 70% and metal prices of A$60,000/t cobalt, A$12,000/t nickel and A$7,500 copper were used to test a number of different scenarios including the recovery of only cobalt. For all the scenarios on optimum pit shell fully enclosing the upper zone of mineralisation was produced. However, even with a 50% increase in the metal price the pit shell would not reach the lower mineralisation. It was concluded that this deeper mineralisation is too low grade and the incremental strip ratio is too high to mine via an open pit. Mineralisation in the lower domains below 15mRL was excluded from the Mineral Resource estimate due to low expectations that it would be economic to mine. The pit optimisation report noted that capital costs for construction of a new plant are unlikely to be recovered from the mining of the Stanton deposit alone and the economics for the project relies on either the availability of the Redbank plant or the discovery of further base metal deposits in the near vicinity which can be added to the resource base.

Exploration Target Range

An Exploration Target estimate was conducted by Ravensgate for eleven of the prospects in the Stanton Project area which have had some drill hole testing. Drilling in these prospects intercepted similar stratigraphy to the Stanton deposit. This Exploration Target assumes that mineralisation similar to Stanton could be delineated in these prospects with further drill testing.

A range of tonnages and grade were determined for each prospect using Leapfrog Geo software. The low range tonnages and grade use only the existing drill hole sampling. To quantify the possible upside the high range case used the lag geochemistry to extend the area beyond existing drilling. The copper rich zones of Stanton 2, Stanton 3 and Running Creek are reasonably well drill tested and the drill sample grades were used for the high range case. For the other deposits that were not as well drill tested the grade of the Stanton Deposit Mineral Resource estimate were applied to reflect the potential for successful additional drilling. The lower zone of mineralisation in the Stanton Deposit which had been excluded from the Mineral Resource estimate was included in the Exploration Target.

A range of 2Mt grading 300ppm cobalt, 80ppm nickel and 5,000ppm copper to 10Mt grading 1,200ppm cobalt, 600ppm nickel and 3,000ppm copper was determined for the ten prospects. Ravensgate note that the potential quantity and grade is highly conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource in any of the prospects.

Planned Expenditure

NCL has provided to Ravensgate their proposed exploration expenditure for the two year period following the capital raising with $3,132,000 ($2,016,300 in Year 1 and $1,115,700 in Year 2) allocated to direct exploration expenditure on the minimum subscription of $5,000,000. Should the maximum subscription of $6,000,000 be raised, a further $880,000 will be directed towards exploration with a more aggressive first year of expenditure for $2,896,300 and the same $1,115,700 in Year 2. Further details of the exploration strategy and expenditure is detailed in Section 3. NCL is intending to focus their initial expenditure on the resource drilling and development studies on the Stanton project whilst directing significant expenditure towards testing exploration targets and generating new targets.

In Years 1 and 2 NCL will undertake resource definition RC and diamond drilling at Stanton with follow-up metallurgical test work and development studies in conjunction with geophysical surveys, soil sampling and mapping.

Ravensgate considers that the exploration strategy and programs proposed by NCL are consistent with the mineral potential and status of the projects. The proposed expenditure is sufficient to meet the costs of the exploration programs proposed and to meet statutory tenement expenditure requirements.

1. Introduction

1.1 Terms of Reference

Ravensgate has been commissioned by NCL to provide an Independent Geologist's Report (IGR) on NCL's Mineral Assets. This report has been prepared in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 Edition) and the Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets for Independent Expert Reports (VALMIN Code 2015 Edition). The report has also been prepared in accordance with Australian Securities and Investments Commission (ASIC) Regulatory Guides 111 (Contents of Expert Reports) and 112 (Independence of Experts).

1.2 Tenement Status Verification

NCL has commissioned independent legal advice regarding the status of the tenements that are referred to in this report (as set out in the Tenement Schedule) underlying the Mineral Assets. Ravensgate has not reviewed the material contracts relating to the Mineral Assets of NCL and is not qualified to make legal representations in this regard. Specific details regarding the tenements and any material agreements pertaining to them are detailed elsewhere in the prospectus.

1.3 Disclaimer

The authors of this report and Ravensgate are independent of NCL, its directors, senior management and advisors and have no economic or beneficial interest (present or contingent) in any of the mineral assets being reported on. Ravensgate is remunerated for this report by way of a professional fee determined in accordance with a standard schedule of commercial rates, which is calculated based on time charges for review work carried out, and is not contingent on the outcome of this report. Fees arising from the preparation of this report are listed elsewhere in the Prospectus.

The relationship with NCL is solely one of professional association between client and independent consultant. None of the individuals employed or contracted by Ravensgate are officers, employees or proposed officers of NCL or any group, holding or associated companies of NCL.

The report has been prepared in compliance with the Corporations Act and ASIC Regulatory Guides 111 and 112 with respect to Ravensgate's independence as experts. Ravensgate regards RG112.31 to be in compliance whereby there are no business or professional relationships or interests which would affect the expert's ability to present an unbiased opinion within this report.

This Independent Geologist's Report has been compiled based on information available up to and including the date of this report, any statements and opinions are based on this date and could alter over time depending on exploration results, commodity prices and other relevant market factors.

1.4 Qualifications, Experience and Independence

Ravensgate has been consulting to the mining industry since 1997 with its services that include valuations, independent technical reporting, exploration management and resource estimation. Our capabilities include reporting for all the major securities exchanges and encompass a diverse variety of commodity types. A summary of the Ravensgate personnel, their qualifications, professional memberships and responsibilities pertaining to this report are summarised in Table 2.

Table 2 Summary of Qualifications, Professional Memberships and Responsibilities

Name	Qualifications	Professional Memberships	Sections Responsible
David Reid	BSc, MAppSc	MAusIMM, MAIG	Sections 2.8, 2.9.1, 2.10, JORC Table 1
Alan Hawkins	BSc (Hons), MSc	MAIG RPGeo, FSEG	All Sections Except 2.8, 2.9.1,
Neal Leggo	BSc (Hons)	MAIG, MSEG	Peer Review All Sections

Author: David Reid, Principal Resource Geologist, BSc Geology, MAppSc (Geological Data Processing – Geostatistics), MAusIMM, MAIG

David Reid is a geologist with 25 years' experience in mining, exploration, resource development and consulting in Australia, West Africa, Indonesia and Europe. He specialises in iron ore, gold and uranium with exposure to many other commodities. He has a keen interest in project evaluation, mine development and production reconciliation. His specific expertise is in advanced geological modelling, geostatistics and resource estimation.

Prior to joining Ravensgate in 2015, David was Principal Resource Geologist with BHP Billiton Iron Ore for 10 years. In this role, he managed a team supporting mine production and rapid mine expansion projects in the Pilbara and West Africa. David's resource modelling skills were founded in gold production and exploration roles in Queensland, Western Australia and West Africa. David has completed a MAppSc with major in geostatistics. He is an expert in the use of Vulcan mine planning software and ISATIS® geostatistical software.

David has extensive hands on West Africa experience through managing gold and iron ore projects in Ghana (Chirano) and Guinea (Nimba), coupled with copper - cobalt experience in the DRC. David is a Vulcan specialist having spent five years with Maptek consulting to industry on geological modelling and resource estimation on a large range of deposits including Worsley Alumina, Jundee, Bronzewing, Grasberg Freeport, Soraka PT Inco and Ok Tedi. David holds the relevant qualifications and experience as well as professional associations required by the ASX, JORC and VALMIN Codes in Australia to qualify as a Competent Person.

Author: Alan Hawkins, Principal Consultant, BSc (Hons) Geology, MSc (Ore Deposit Geology), MAIG RPGeo, FSEG

Alan Hawkins is a geologist with over 20 years' experience in near mine and regional mineral exploration, resource development and the management of exploration programs. He has worked in a variety of geological environments in Australia and Indonesia, primarily in gold and copper. Prior to joining Ravensgate, Alan worked for Newmont Mining Corporation as a Principal Geologist in their exploration, corporate and business development divisions, providing technical support, due diligence and rapid first-filter geological and economic analysis to M&A teams in the Asia Pacific region as well as US and African EBD teams. This role also included project and non-core asset divestments including commercial negotiations with junior exploration companies, stakeholders and land & legal teams.

Previous to this, Alan held various principal and senior regional exploration management roles in WA and NT. In the 1990's Alan worked as a near mine exploration geologist for Eagle Mining Corporation NL, Great Central Mines Ltd and Normandy Mining Ltd at the Jundee-Nimary Gold Mine and was part of the team that discovered the +2Moz gold Westside deposit, before joining Newmont's regional exploration team. Alan holds the relevant qualifications and professional associations required by the ASX, JORC and VALMIN Codes in Australia to qualify as a Competent Person as defined in the JORC Code. He is a Qualified Person under the rules and requirements of the Canadian Reporting Instrument NI43-101 and is a Registered Professional Geoscientist in the field of Mineral Exploration with the Australian Institute of Geoscientists.

Peer Review: Neal Leggo, Principal Geologist BSc (Hons) Geology, MAIG, MSEG.

Neal Leggo has over 30 years' experience in minerals geology including senior management, consulting, exploration, development, underground mining and open pit mining. He has extensive experience with a wide variety of commodities across numerous geological terrains within the Asia-Pacific region. Prior to joining Ravensgate, Neal worked for FMG leading a large field team undertaking fast-track exploration, delineation and feasibility study of a major new iron ore discovery in the Pilbara of WA. Previous to this Neal was Exploration Manager at Crescent Gold where he led a successful exploration team and also managed feasibility study and development work on seven gold deposits in preparation for mining. At Hatch, he undertook numerous geological consulting assignments included scoping, prefeasibility and review studies, geological audit and due diligence. At BHP, he modelled mineral resources including the Cannington, Mt Whaleback and Yandi world-class deposits. Previous to this, Neal worked 8 years in Mt Isa for MIM where roles included chief geologist for the Hilton underground lead zinc mine and exploration manager for Isa District. During the 1980s he worked as a field geologist across northern Australia on a wide variety of exploration projects and mines. Neal offers extensive knowledge of available geological, geophysical, geochemical and exploration techniques and methodologies, combined with strong experience in feasibility study, development and mining of mineral deposits. Neal holds the relevant qualifications and professional associations required by the ASX, JORC and VALMIN Codes in Australia to qualify as a Competent Person as defined in the JORC Code.

1.5 Specialist Declarations and Consent

The information in this report that relates to Technical Assessment of Mineral Assets reflects information compiled and conclusions derived by Mr David Reid, who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Reid is not an employee of NCL. Mr Reid has sufficient experience relevant to the Technical Assessment of the Mineral Assets under consideration and to the activity which he is undertaking to qualify as a Specialist as defined in the JORC Code (2012 Edition). Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Consent has been sought from NCL's representatives to include technical information and opinions expressed by them. No other entities referred to in this report have consented to the inclusion of any information or opinions and have only been referred to in the context of reporting any relevant activities.

1.6 Competent Person Statement

The information in this report that relates to Mineral Resources and Exploration Targets are based on information compiled by Mr David Reid, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Reid is an employee of Ravensgate. Mr Reid has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the JORC Code (2012 edition). Mr Reid consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

1.7 Principal Sources of Information

The principal sources of information used to compile this report comprise technical reports and data variously compiled by NCL and their partners or consultants, publicly available information such as ASX releases, government reports and discussions with NCL technical and corporate management personnel. A listing of the principal sources of information are included in the references attached to this report. Figures used in this report have been prepared by NCL with appropriate direction, input and review from Ravensgate.

A site visit was carried out by Ravensgate as part of this Independent Geologist's Report. Mr David Reid (Principal Resource Geologist) visited the Stanton Project area on 16 May 2017 and viewed Stanton drill core at the Darwin Core Library Archive, on the 17 May 2017.

Ravensgate has endeavoured, by making all reasonable enquiries, to confirm the authenticity, accuracy and completeness of the technical data upon which this report is based. A final draft of this report was also provided to NCL, prior to finalisation by Ravensgate, requesting that NCL identify any material errors or omissions prior to its final submission. Ravensgate does not accept responsibility for any errors or omissions in the data and information upon which the

opinions and conclusions in this report are based, and does not accept any consequential liability arising from commercial decisions or actions resulting from errors or omissions in that data or information.

Geological information in section 2.4 is largely based on the work of David Rawlings who completed a PhD on the Redbank copper deposit and examined most mineral deposits in the McArthur Basin, including Westmoreland uranium, McArthur River zinc-lead-silver, Groote Eylandt manganese, Gove bauxite, Ranger uranium, Redbank copper and Stanton copper-cobalt-nickel, whilst working for the Northern Territory Geological Survey (NTGS).

1.7.1 Background Information

The projects discussed in this report are located in the Northern Territory (NT) of Australia. A locality map of the projects is presented in Figure 1 below. A summary of the tenement details are listed in Table 3 below. References, a glossary of terms and a list of abbreviations are included at the end of this report.

Figure 1 Locality Map of NCL Projects

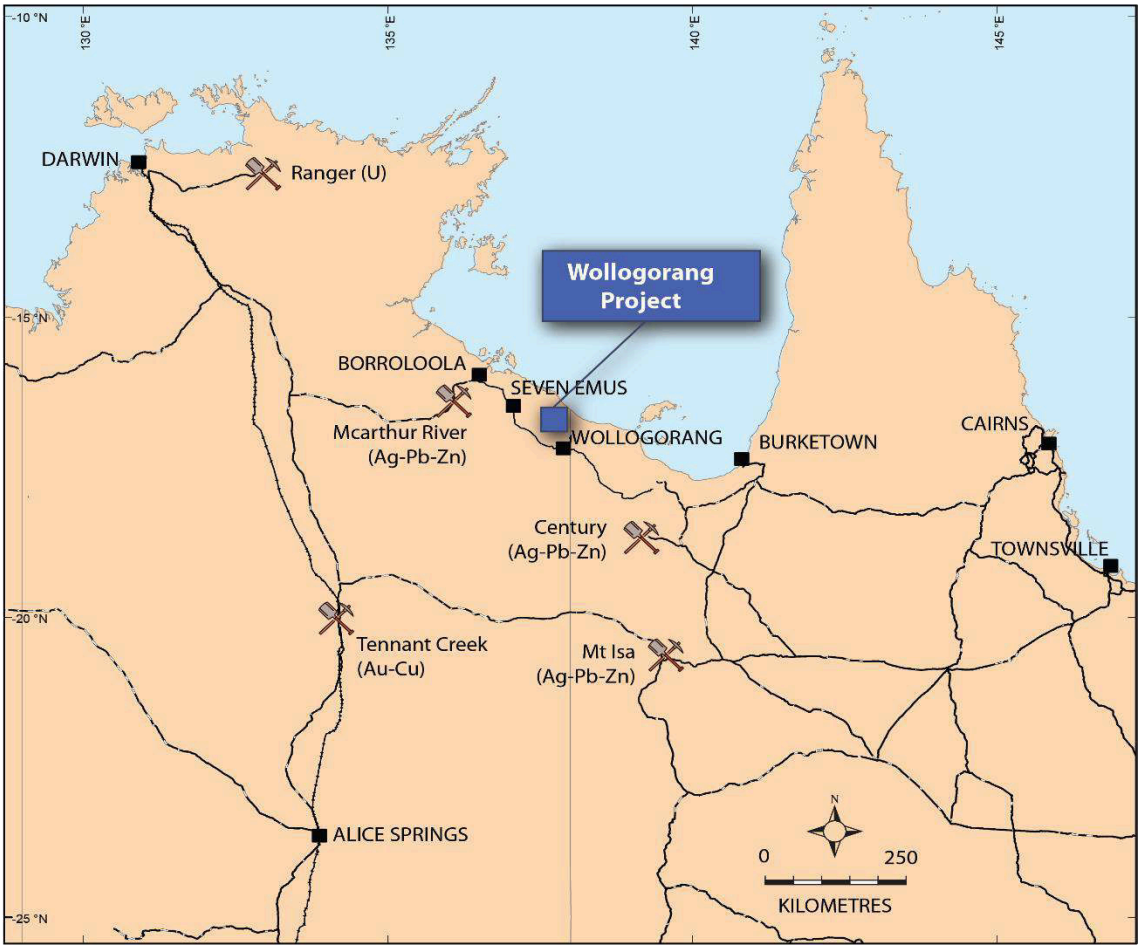


Table 3 Tenement Schedule

Project	Tenement ID	Tenement Name	Registered Holder	Area (km^2)	Blocks	Grant Date	Expiry Date
Wollogorang	EL30496	Karns	Mangrove Resources Pty Ltd	368.45	112	28/05/2015	27/05/2021
Wollogorang	EL30590	Selby	Mangrove Resources Pty Ltd	351.82	107	28/05/2015	27/05/2021
Wollogorang	EL31272*	Stanton / Running Creek	Mangrove Resources Pty Ltd	411.17	125	9/04/2016	8/04/2022

*Notes: Specific details regarding the tenements and any material agreements pertaining to them are available in a dedicated section within the Prospectus. *EL31272 is the amalgamation of EL30458 and 30495*

2. WOLLOGORANG PROJECT – STANTON AND RUNNING CREEK

2.1 Location and Access

The project is located in the Wollogorang region of the Roper Gulf Shire in the Northern Territory of Australia, adjacent to both the Queensland border and the Gulf of Carpentaria (Figure 1 and Figure 4) within the Selby 1:100,000 sheet 6464 and the Robinson River 1:250,000 sheet SE5304. The tenements are centred on the Stanton prospect which is located 60km north-northwest of Wollogorang Station and 870km southeast of Darwin.

The area is remote from population centres and is most readily accessible from Wollogorang station and roadhouse, 70km to the south and from Borroloola 180km to the northwest via Seven Emus station (Figure 1). Access within the tenement is via partly rehabilitated exploration and station tracks relating to the extensive exploration carried out by CRAE in the mid-1990s. The McArthur River silver-lead-zinc mine is located ~70km south from Borroloola and ~150km west-northwest from the project area.

The climate is tropical with annual rainfall between 800 and 1,200mm falling mostly between December and March with cyclones a frequent phenomenon. Access throughout this wet season can significantly restrict vehicle access during this time. Seven main creeks cross the track to Wollogorang with Running Creek being the main perennial stream. Access is however generally assured from July to October inclusive.

The area lies in open grassy woodland (Figure 2) on the coastal plain of the Gulf of Carpentaria about ~35km from the coast. The majority of the area is very flat and for the most part it is trafficable for off road 4WD vehicles. Soils are predominantly sandy red earths and shallow gravelly sands.

Figure 2 Site Visit Second Landing Area, South of Stanton

Location: 793,710E, 8,143,883N AMG Zone 53 K

The project area is predominantly located within the southeastern corner of the Gulf Coastal and Gulf Plains bioregions. The Wollogorang region consists of three bio-regions, however only the Gulf Plains bioregion is represented at the project. A rich diversity of flora and fauna does exist within the region (Trainor, 1997), however the Wollogorang Project lies within scrubby plains with lower biodiversity. Areas of high biodiversity are confined to the numerous gorges and associated rainforest-type environment, away from the project tenure.

Running Creek (Figure 3) crosses the eastern (EL31272) and central licence (EL30590) areas, while Karn's Creek crosses the southwestern portion of the western licence area (EL30496) and the larger Calvert River crosses the very northern tip of the same licence boundary (Figure 4). Smaller tributaries and drainage lines feed into these creeks and rivers.

Figure 3 Access Track Crossing at Running Creek

Location: (799,881E 8,147,100N, MGA Zone 53 K)

2.2 Tenure

The project consists of three granted exploration licences, with a total area of 1,131.44km^2 located on pastoral land, within Wollogorang Station (NT pastoral lease No 1113), Pungalina Station (NT pastoral lease No 997) and Calvert Hills Station (NT pastoral lease No 1169). The licence details are listed in Table 3 and their location is shown in Figure 4. Mangrove Resources Pty Ltd (Mangrove), a 100%-owned subsidiary of Coolabah Group Pty Ltd, is the listed holder of the Wollogorang Project. NCL has entered into a Heads of Agreement with Mangrove to acquire the Wollogorang Project. The structure and basic terms of this purchase agreement can be seen in Figure 5 and are documented in detail elsewhere in this Prospectus by the Lead Manager. The project has three exploration titles associated with it – EL30496, EL30590 and EL31272 – all of which are six-year leases. Within these lease areas are the existing Stanton/Running Creek Prospects and the Selby and Karns Prospects (Figure 4).

A study by the Aborigine and Pastoral Authority (AAPA), commissioned by CRAE in 1994 and documented by Harder (2000) showed that there no sacred sites in the Stanton / Running Creek area. Mangrove recently (April 2017) engaged Darwin based Complete Tenement Management (CTM) to carry out due diligence on Exploration Licences 30496, 30590 and 31272. CTM have advised that whilst there are no Restricted Work Zones, there are Registered Sacred Sites on each of the Exploration Licences, which are recorded by the AAPA. These areas will require further investigation prior to any on-ground work that will cause 'significant disturbance'. In summary, CTM advised that the titles are in good standing and that in CTM's opinion, nothing was discovered during the course of the research to impede the pending purchase transaction.

Figure 4 Wollogorang Project Tenement Location Map

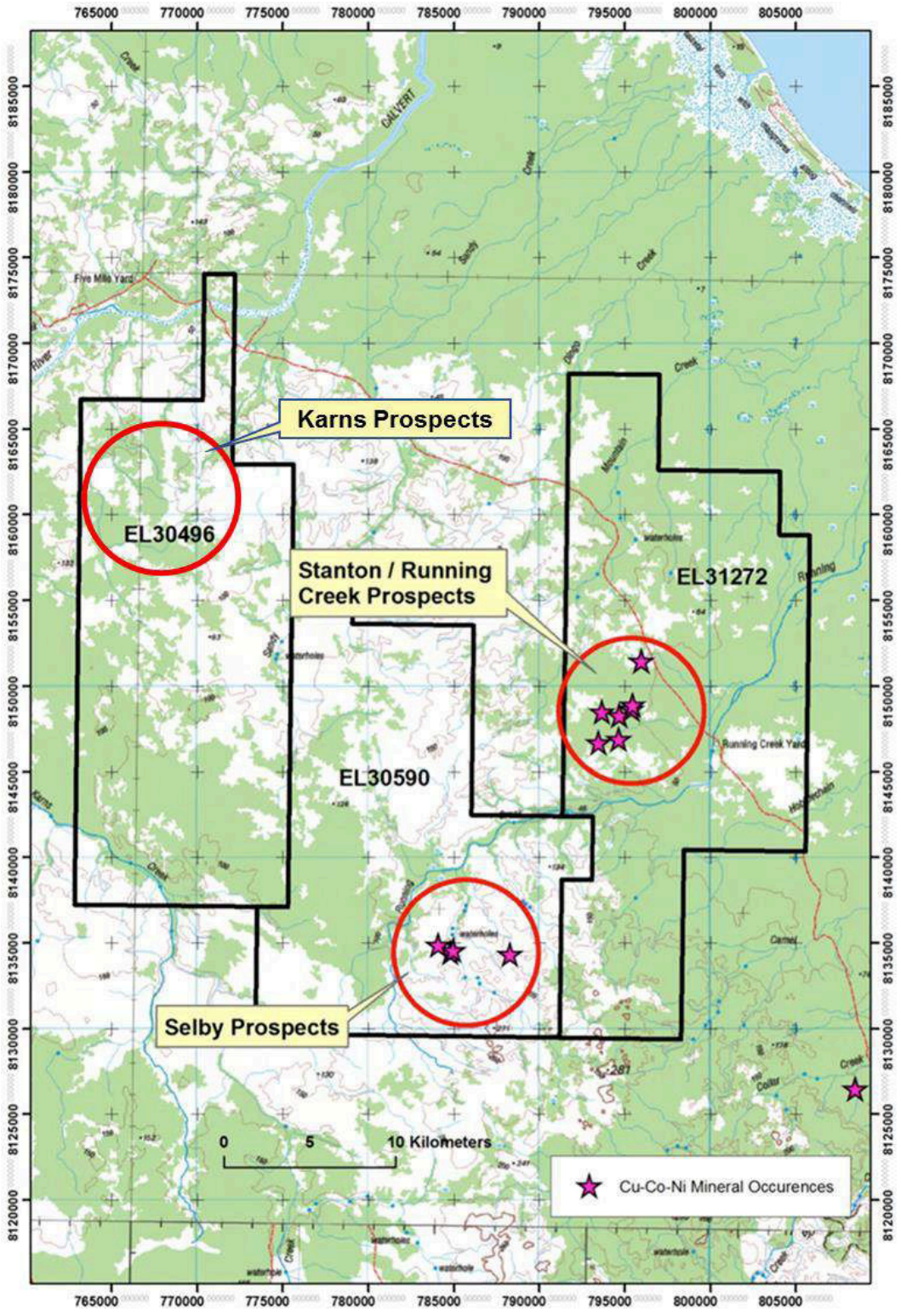
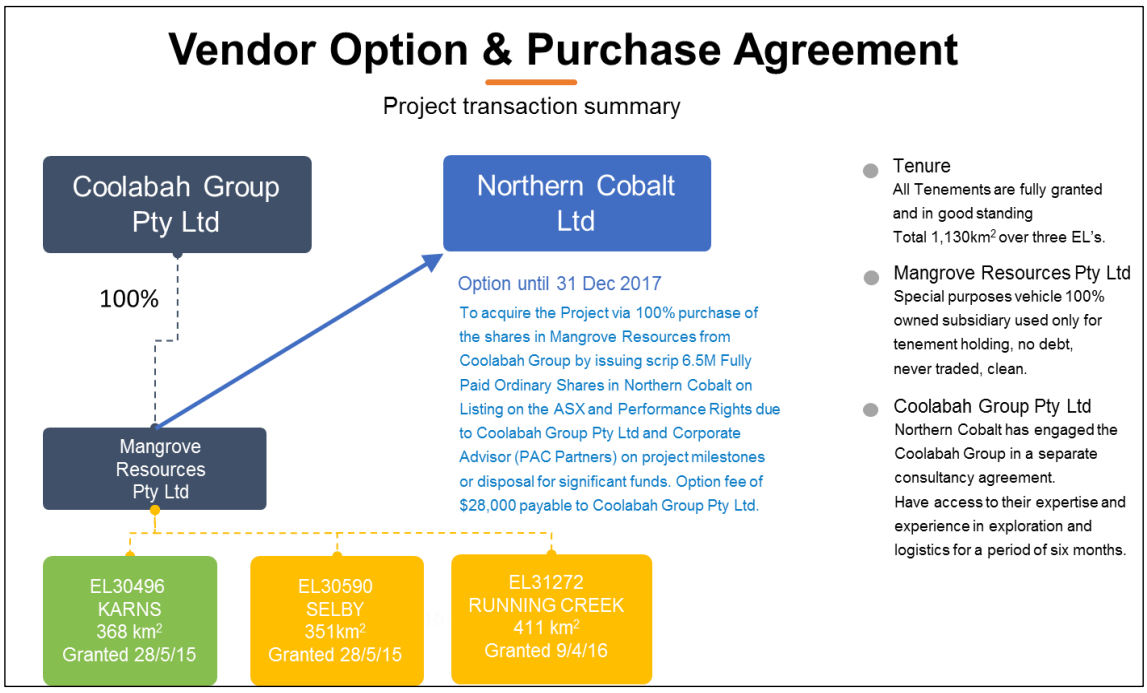


Figure 5 Vendor Option and Purchase Agreement for the Wollogorang Project



Source: Northern Cobalt Ltd

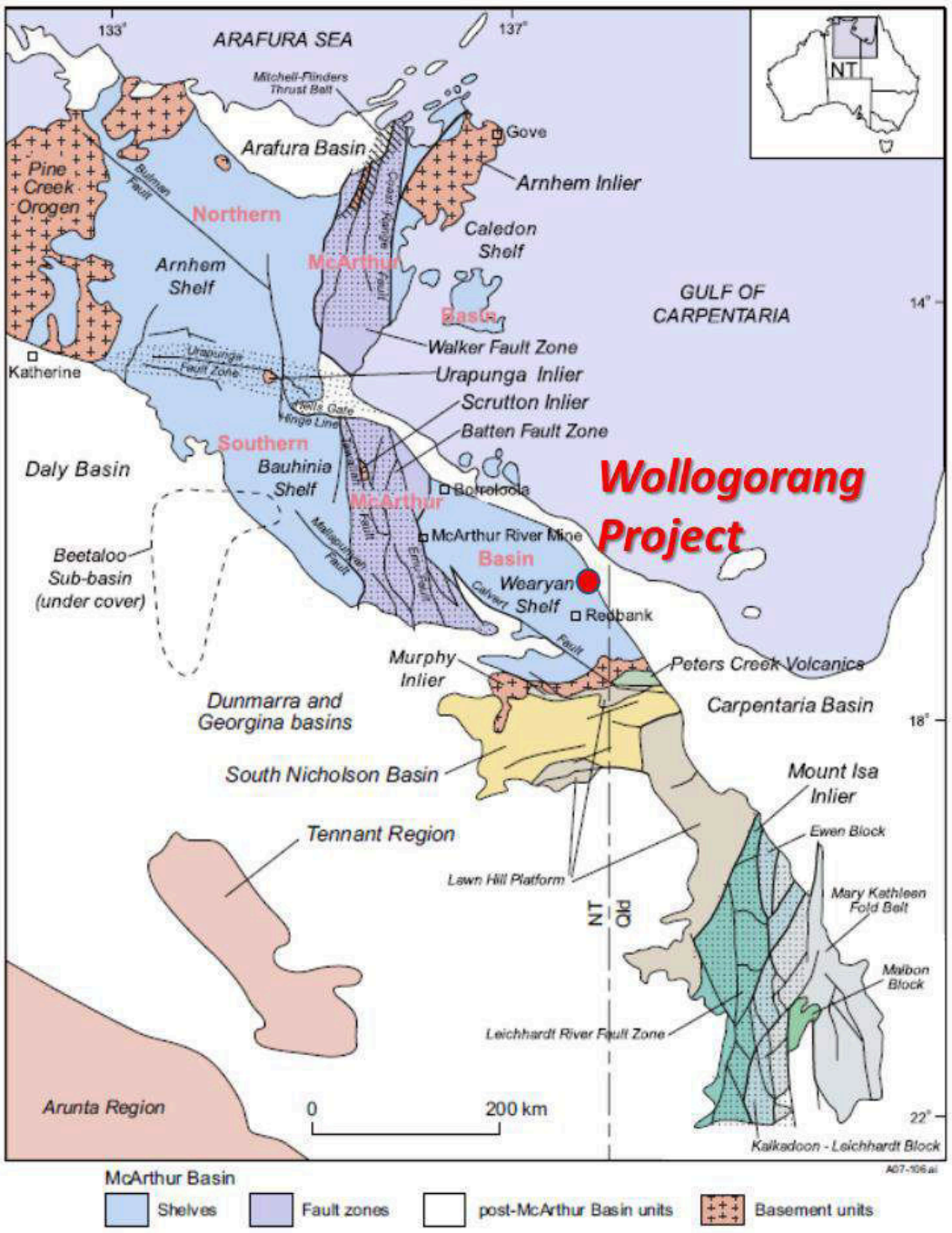
2.3 Regional Geology

The project area is located within the Wearyan Shelf tectonic element (Figure 6) of the southeastern Palaeoproterozoic to Mesoproterozoic McArthur Basin, a 5 - 12km thick platform cover sequence of mostly unmetamorphosed sedimentary and lesser volcanic rocks deposited on the North Australian Craton, containing dolostone, sandstone and shale units with minor felsic and mafic volcanics (Goulevitch, 2002; Rawlings, 1999). Exposures of the basin cover an area of about 180,000km^2 in a roughly northwest trend from the Queensland – Northern Territory border, along the west coast of the Gulf of Carpentaria, to the north coast of Arnhem Land (Figure 6). The McArthur Basin unconformably overlies the Palaeoproterozoic Pine Creek Orogen to the northwest, Murphy Inlier to the southeast and Arnhem Inlier to the northeast and is host to mineral deposits such as the McArthur River (HYC) zinc-lead-silver mine, the Westmoreland uranium deposit and is spatially associated with the uranium deposits of the Alligator Rivers region, including Ranger and Jabiluka. The basin also hosts numerous other occurrences of base metals, iron ore, manganese and uranium. Bauxite is mined at Gove and manganese is mined on Groote Eylandt from world class Cenozoic deposits (Rawlings, 2013). The most comprehensive study of the southern part of the basin is documented in Jackson *et al.*, (1987).

To the west of the project area, high relief topography is developed on a dissected plateau surface of Proterozoic Masterton Sandstone of the Upper Tawallah Group. A north-northwest trending escarpment at the plateau margin marks the edge of the broad coastal plains of the Gulf of Carpentaria. The Wollogorang Project is situated on the coastal plain where the Gold Creek Volcanics of the Tawallah Group are overlain by 5 – 10m of Cainozoic sand, silt and laterite (Goulevitch, 2002).

The Tawallah Group (Jackson *et al.*, 1987; Haines *et al.*, 1993) is the most extensive and voluminous unit in the southern McArthur Basin, cropping out as resistant sandstone ranges and plateaux between the Murphy and Urapunga Inliers (Figure 6). It is the oldest component of the southern McArthur Basin, lying unconformably on various Orosirian basement units, including the Cliffdale Volcanics (Ahmad and Wygralak, 1989), Scrutton Volcanics (Pietsch *et al.*, 1991) and Urapunga Granite, providing a maximum age of ~1,850 Ma (Rawlings, 1999).

Figure 6 Regional Tectonic Setting of the McArthur Basin and Wearyan Shelf

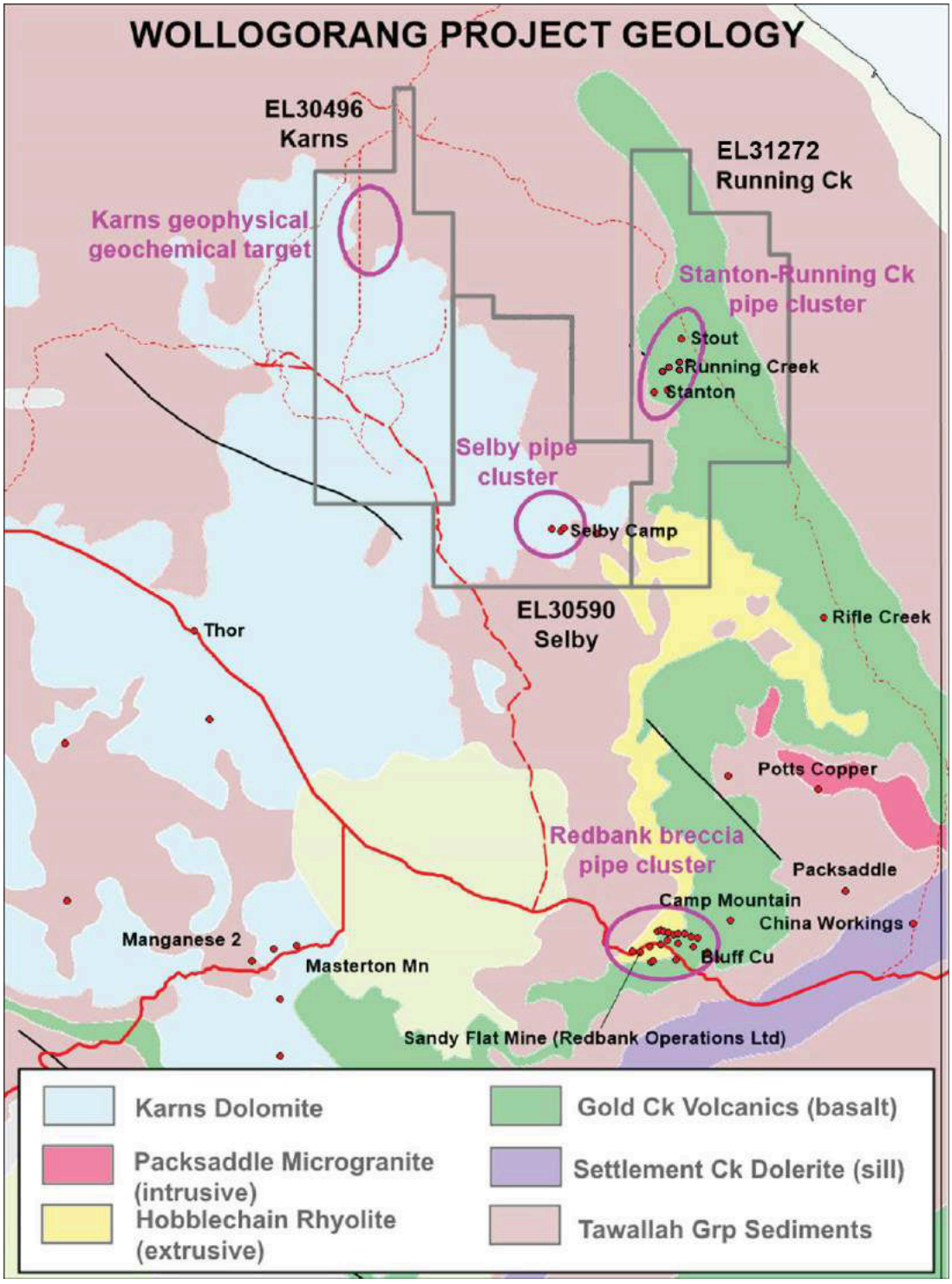


(modified after Rawlings, 2002)

2.4 Local Geology and Mineralisation

The following section details the geology and mineralisation of the Stanton / Running Creek, Selby and Karns prospect areas. The majority of detail and focus has been directed towards the Stanton / Running Creek area of the project as this area has received the most work, contains the Mineral Resource described in section 2.8 and therefore adds the most value to NCL. The Selby and Karns prospect areas are given brief descriptions in comparison.

Figure 7 Geology of the Wollogorang Project Area



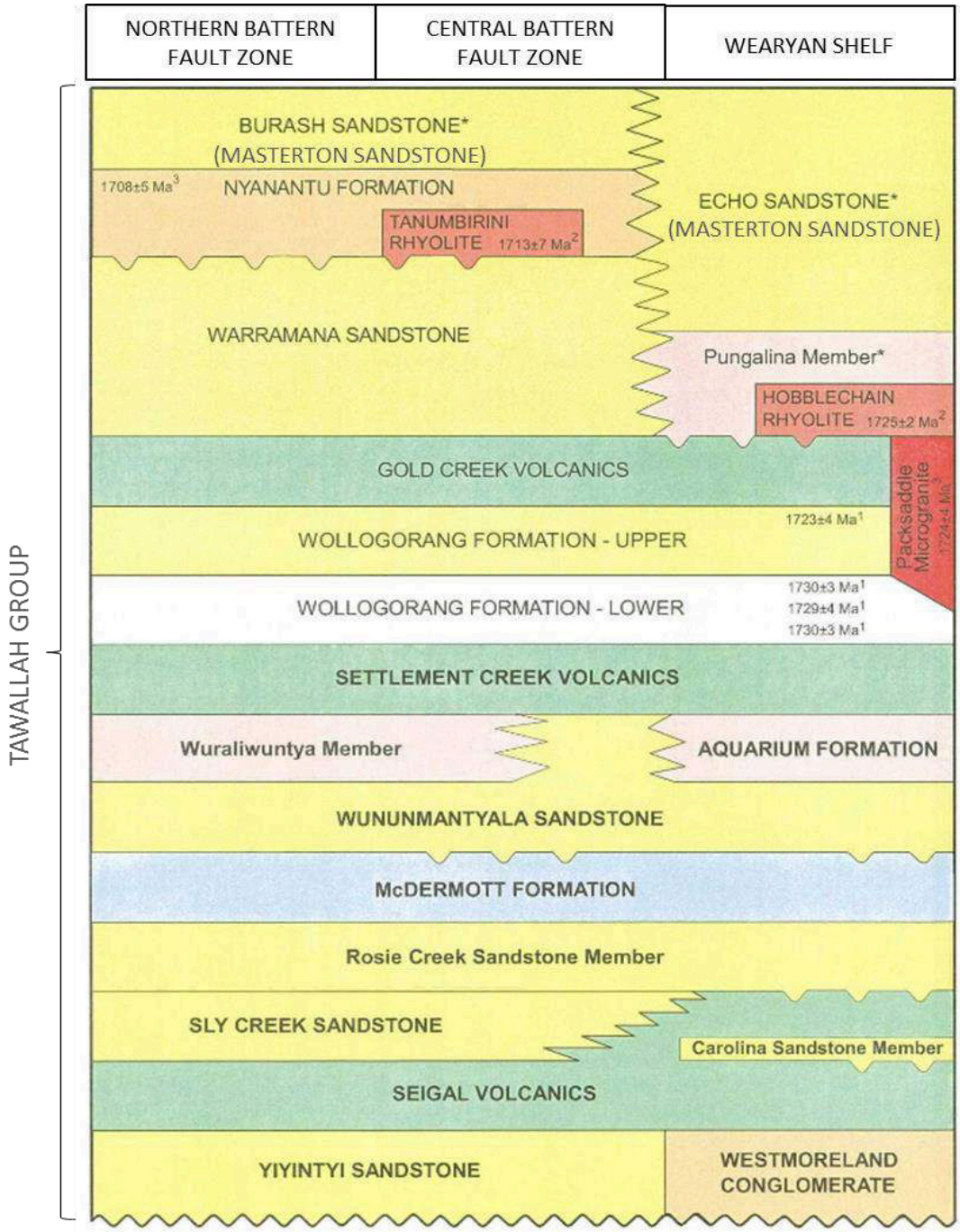
2.4.1 Local Geology of the Wollogorang Project

2.4.1.1 Stanton / Running Creek Area

The local surface geology of the Stanton / Running Creek area, as described by Rawlings (2006, 2013), is dominated by the Gold Creek Volcanics of the Tawallah Group (Figure 7 and Figure 8). This formation is a series of basaltic lavas and shallow intrusives, interlayered with thin oxidised sandstone, carbonate and siltstone units. It is conformably underlain by reduced sedimentary facies of the Wollogorang Formation, which includes dolostones, sandstones and carbonaceous shales. A regional dolerite sill, the Settlement Creek Dolerite, was emplaced synchronous with effusion of the Gold Creek Volcanics. The Wollogorang Formation and Settlement Creek Dolerite do not outcrop on the Stanton prospect area, but are however intersected in a number of drill holes on the tenement. Within the district, the Gold Creek Volcanics are disconformably overlain (Figure 8) by a felsic volcanic package that includes a

rhyolitic rheoignimbrite sheet (Hobblechain Rhyolite), proximal epiclastics (Pungalina Member) and distal reworked clastics (Echo Sandstone).

Figure 8 Lithostratigraphy of the Tawallah Group



Source: Rawlings (2002)

SHRIMP U-Pb zircon geochronological data from Jackson et al., (1997)[1], Page and Sweet (1998)[2] and Page et al., (2000)[3].

Within EL31272, the rhyolite is absent and a ~30m interval of Pungalina Member conglomerate and siltstone rests on the Gold Creek Volcanics. A mesa of coarse lithic sandstone is the only remnant of the Echo Sandstone in the tenement. Deformation of the Gold Creek Volcanics and Wollogorang Formation is thought to have been related in part to emplacement of the Hobblechain Rhyolite and its subvolcanic feeder, the Packsaddle Microgranite (the yellow and red units, respectively (Figure 7). Stratigraphy is not well exposed due to eluvial cover and thick spinifex growth with poorly outcropping flat lying or gently dipping units of the Gold Creek Volcanics. Lithologies comprise intercalated volcanics and sedimentary units. The volcanics are generally dacitic to basaltic in affinity and partly vesicular with areas of trachyte. The sedimentary units include mudstone, siltstones and sandstones/quartzites, which display chrysocolla veining in the Running Creek area (Figure 9).

Figure 9 Chrysocolla Veins in Sandstone at Running Creek

100

Cover generally consists of lateritic eluvium of ~1m thickness and up to a few metres in the areas of most apparent interest. Lateritisation of the sedimentary units is very apparent and will have involved scavenging of copper, nickel, cobalt and manganese from underlying sedimentary units and volcanics. This is a regional phenomenon and may explain why some anomalies that were drilled did not produce anomalous geochemistry.

2.4.1.2 Karns Area

The geology of EL30496 is largely comprised of two main geological units (Figure 7; Rawlings, 2006):

- Palaeoproterozoic Echo Sandstone, a 150m thick coarse-grained lithic sandstone unit of the upper Tawallah Group, which is flat lying to shallow dipping throughout the tenement.
- Mesoproterozoic Karns Dolomite, which in the tenement is largely comprised of a ~30-50m thick basal sandstone facies, but also locally includes the overlying variably-chertified dolostone facies. The basal unconformity is a very low angle truncation of the underlying Tawallah Group that is difficult to recognise in many places. The basal sandstone is mostly fine-grained "tempestite" quartzose to lithic sandstone, which is locally very phosphatic, especially at the Selby prospects to the southeast, where it is comprised of up to 20% P_2O_5.

Cambrian conglomerate and sandstone outliers, with a basal breccia regolith of chert also occur. Tertiary sand and soil covers ~50% of the tenement; a veneer thought to be no more than 20m thick.

The most notable features in the tenement are the large radiometric anomalies present at the stratigraphic level of the basal Karns Sandstone. Some of these anomalies cover tens of square kilometres in area. The radiometric anomalies continue through to the Selby prospects on EL30590. These radiometric anomalies generally coincide with phosphatic sandstone and chert that is developed at the basal unconformity of the Karns Dolomite, but apparently only on the Wearyan Shelf (Rawlings, 2013a).

2.4.1.3 *Selby Area*

The following account of the local geology at Selby is based on White (2009). Rocks of the Tawallah and McArthur Groups dominate the geology of the tenement. The Tawallah Group is represented by rocks of the Masterton Formation, and Karns Dolomite provides outcrops of the McArthur Group sedimentary units (Figure 7).

The Masterton Formation comprises predominately arenites and volcanics. The arenaceous units are characterised by well-developed traction-current structures such as current beds and ripple marks. The arenites are predominately quartz, with a ubiquitous white to yellow kaolin matrix. Sandstone and siltstone fragments occur occasionally and secondary silica cement is invariably present. Small lenses of polymictic conglomerate containing sandstone and igneous rock pebbles and cobbles suggest a granitic/acid volcanic/sandstone provenance. The Pungalina Member, a constituent of the Masterton Formation, consists of red, micaceous sandstone and siltstone. Halite pseudomorphs, mud cracks, ripple marks, flow casts and laminated beds are characteristic, and suggest a lagoonal depositional environment.

The Karns Dolomite is the only example of the McArthur Group to be exposed within the tenement. The dolomite unconformably overlies the Masterton Formation. The basal dolomite incorporates blocks of sandstone derived from the underlying Masterton Formation, and may imply that the carbonate rocks were deposited on a stable submarine shelf. Chemical analyses show that most of the Karns Dolomite is dolomite with minor calcite and siderite; occasional beds of dolomitic limestone and oolitic chamosite bearing dolomite are also present.

2.4.2 Mineralisation

The following account of structural architecture, mineralisation and associated mineralisation models for ore genesis is based on the work of Rawlings *et al.*, (1996), Rawlings (2002, 2006, 2013) and for the most part is extracted verbatim from Rawlings (2006) – Robinson River SE 53-04 1:250,000 Geological Map Series Explanatory Notes. In Ravensgate's opinion, this work is the best account of the geology and mineralisation in the public domain. David Rawlings examined the Stanton area whilst working for the NTGS, whilst completing a PhD (in 2002) on the Redbank copper deposit which is located ~50km south of the Wollogorang Project area.

2.4.2.1 *Host Lithology*

Mineralisation in the Wollogorang project area is stratabound, mostly constrained within the 'target unit' (Figure 10 and Figure 11) of the upper Gold Creek Volcanics, comprising 15–20m of red oxidised, ferruginous, mildly dolomitic mudstone and fine sandstone (heterolithic 'redbeds'). This lithofacies is characterised by ubiquitous dewatering structures, which were probably partly responsible for facilitating cross-stratal fluid flow, a crucial element in the generation of sediment-hosted copper deposits (Lustwerk and Wasserman, 1989). Minor mineralisation also occurs in the interlayered basalt, peperite and dolarenite/sandstone units above and below the 'target unit', to depths of about 100m (Rawlings, 2006).

2.4.2.2 *Mineralisation*

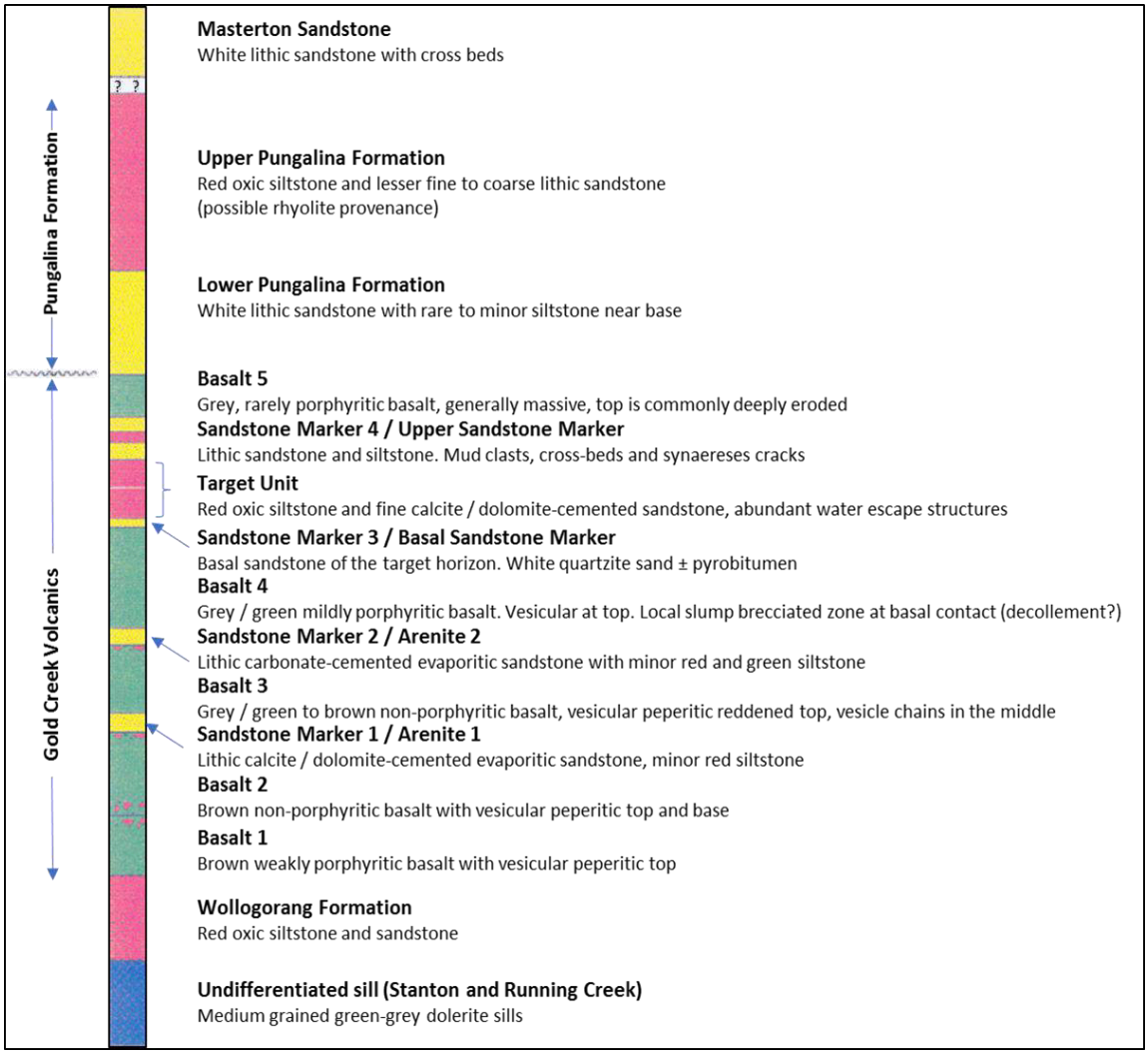
Following reports of historic mine workings (refer Section 2.6), subsequent mapping and exploration in the Running Creek area, of the current Wollogorang project, by Fisher (1977, 1980, 1989, 1991a, b) identified eight anomalous circular topographic and aerial photofeatures, which were shown to represent breccia pipes like those at the Redbank mine (Ahmad and Wygralak, 1989).

Ore minerals are mainly siegenite and chalcopyrite below the current groundwater table (>15m depth), and malachite, azurite, chalcocite, native copper and asbilite (a manganese-base metal oxide) in the oxidised zone. Primary sulphides occur as disseminated 1–5mm sized euhedral (cuboid) crystals in coherent and brecciated mudstone and sandstone within the breccia pipes, and in quartz-dolomite veins within altered basalt and dolarenite units adjacent to the pipes. Local additional gangue minerals include chlorite, K-feldspar, bitumen, celadonite, pyrite, haematite and siderite. Bitumen infilling porosity is locally common in sandstone and live oil shows and bleeds have also been recorded (Rawlings, 2006).

2.4.2.3 *Structure and Brecciation*

Breccia pipes at Stanton, Running Creek and other nearby prospects are circular, trapezoidal or elliptical in plan and have a diameter of less than 100m. They often exhibit a surface expression of anomalously steep radial dips and stratigraphic juxtapositions that imply faulting and downward movement of the pipe interior (Fisher, 1980). Some pipes are, however, obscured by younger deposits, or their associated faults are difficult to recognise in the field, and are therefore essentially blind. Drilling indicates that the pipes are characterised by various breccias and fault blocks displaying chaotic to predictable stratigraphic juxtapositions (Rawlings, 2006).

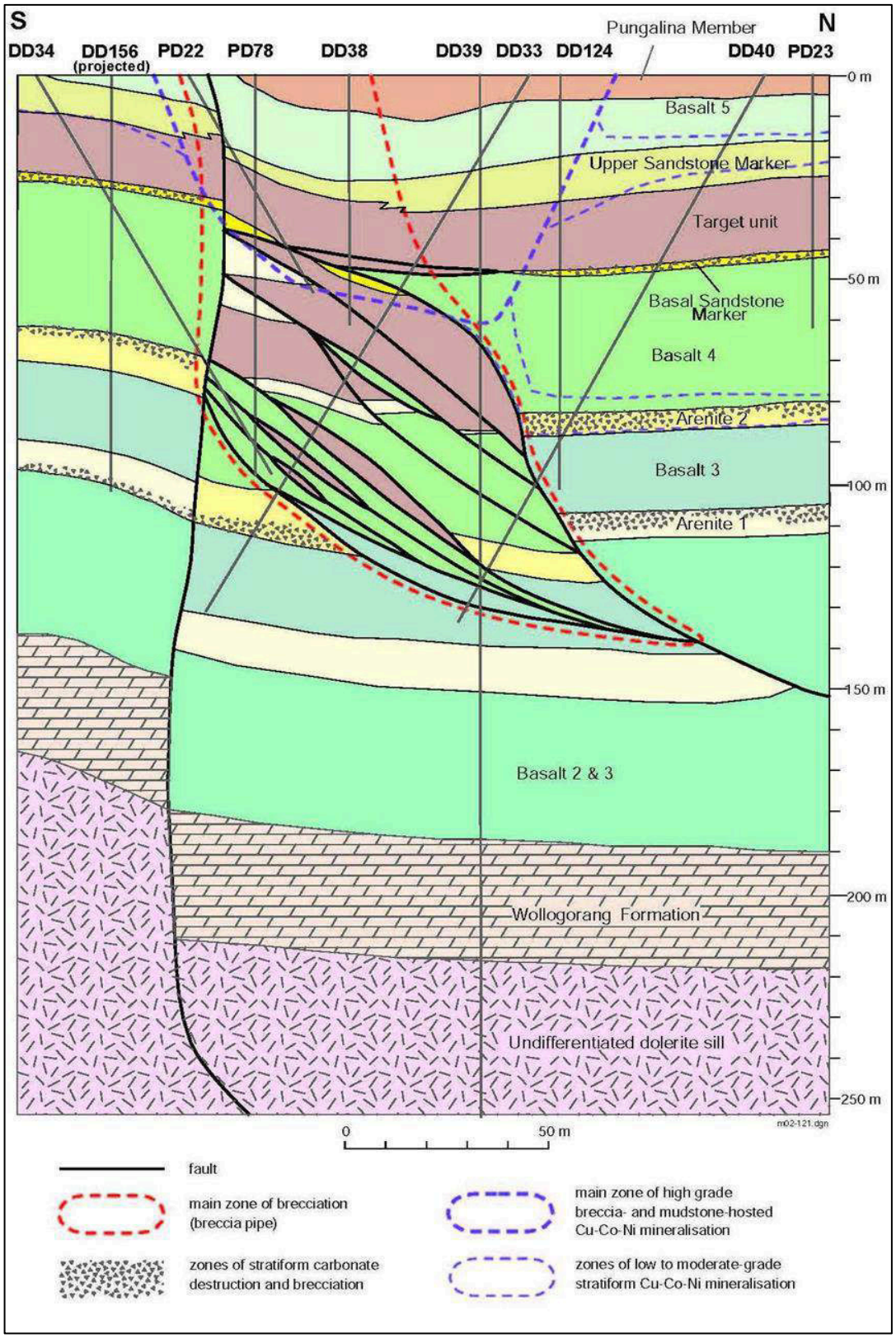
Figure 10 Stratigraphic Column: Upper Tawallah Group, Stanton Area



(modified from Rawlings, Cooke and Bull, 1996)

Breccia composition ranges from monomict to polymict and comprises clasts of sandstone, mudstone and basalt in a mud-sand matrix (Rawlings *et al.*, 1996). The degree of preservation of the stratigraphy through the breccia pipes varies. Breccia textures range from monomict stratigraphy-preserving to polymict clast-rotated, reflecting the degree of stratigraphic disturbance. Sedimentary clast-matrix relationships show both ductile and brittle deformation features, including angular sandstone clasts with an early carbonate cement in a matrix of disrupted, unconsolidated mudstone and angular mudstone clasts in a disrupted sand matrix. This indicates that brecciation occurred while the sandstone and mudstone were only partially consolidated (i.e. in late Tawallah Group time). Some faults and fault zones clearly truncate earlier-formed breccias and appear to have been active while the sediments were more or less consolidated. As expected, basalt units show only brittle features (Rawlings, 2006). In cross-section (Figure 11), the focus of major brecciation and stratigraphic offset at Stanton is a pipe shaped body, tapering and plunging downward at 40° to the northwest.

Figure 11 Cross Section Through Stanton Breccia Pipe



(after Rawlings, 2006)

Drilling data indicate that the overall Gold Creek Volcanics stratigraphy within the pipe lies lower than the adjacent succession (i.e. it has 'dropped down'). Drilling has thus not yet reached the terminating structure where stratigraphy reverts to the undisturbed state. It appears likely that the breccia body continues down-plunge, perhaps into the underlying Wollogorang Formation. Within the breccia body, the stratigraphy has clearly been modified

by structural repetitions and truncations along faults dipping at ~35° to the northwest. Segments of the 'target unit' have been repeated, perhaps as many as four times, in the core of the breccia zone. Rafts of the adjacent basalt and arenite units have been incorporated into the breccia, but overall, stratigraphy within each fault repetition has been maintained. The breccia pipe is interpreted to be bounded to the southeast by a large sub-vertical fault, and by a shallowly plunging fault to the northwest, both faults accommodating the net stratigraphic juxtaposition (Figure 11).

Brecciation at Stanton also occurs outside the main body, along discrete horizons at the level of 'Sandstone Marker 1' / 'Arenite 1', 'Sandstone Marker 2' / 'Arenite 2' and the 'Sandstone Marker 3' / 'Basal Sandstone Marker' (Figure 11); Rawlings *et al.*, 1996). This brecciation is associated with green, soft- sediment deformed, muddy lithic sandstone, sandwiched between early-cemented evaporitic dolarenite and adjacent basalt units. Brecciation also accompanies substantial thinning of the dolarenite units. There is good evidence that this stratiform breccia and 'lithic sandstone' formed due to destructive alteration (de-dolomitisation) of dolarenite and consequent volume loss and differential compaction (Rawlings, 2006).

2.4.2.4 Breccia Pipe Formation

The structural event that formed breccia pipes in the Wollogorang project area is thought to be contemporaneous with folding of the Gold Creek Volcanics, development of a disconformity at the base of the Pungalina Member, and emplacement of the Hobblechain Rhyolite and Packsaddle Microgranite (Rawlings *et al.*, 1996, Rawlings, 2002). The reasoning is based on the following:

- the Pungalina Member is essentially undeformed and contains no breccia pipes or 'Jura-style' folds in this area;
- the Pungalina disconformity truncates folds in the Gold Creek Volcanics;
- the Pungalina Member infills palaeotopographic features in the top of the Gold Creek Volcanics that resemble the plan shape and dimensions of breccia pipes; and
- immature, locally derived rhyolite detritus is prolific in the basal Pungalina Member.

Based on timing and characteristics, two alternative models are suggested for the formation of the Stanton breccia pipe (Rawlings, 2013). These models are also applicable to other pipes in the region, including those at Redbank. Brecciation was localised either within a transtensional jog associated with a north-northeast trending, steeply northwest-dipping strike-slip (wrench) faulting, or within a dilatational boundary between two gravity-driven slide blocks. Both alternatives are consistent with peripheral deformation associated with the emplacement of shallow intrusions (Merle and Vendeville, 1995; Rawlings and Page, 1999).

In their model, Rawlings and Page (1999) interpreted Jura-style folding and radial deformation in the correlative upper Katherine River Group in the MOUNT MARUMBA 1:250,000 map sheet to be the result of lateral gravity sliding of a semi-consolidated sediment-basalt package outward from the intruding Jimbu Microgranite. Similarly, in the ROBINSON RIVER 1:250,000 map sheet deformation can be attributed to emplacement of the Packsaddle Microgranite and unexposed equivalents (Rawlings, 1997). The strike-slip fault jog alternative is preferred in the case of Stanton because there is no significant vertical displacement on local fault systems; structural cross-sections through the breccia pipe (Figure 11) are impossible to balance; and sub-horizontal, curved to flat fault striae have been recognised at Stanton and Sandy Flat (Redbank) during reconnaissance studies (Rawlings, 2002).

Although a macro-scale orthogonal geometric relationship has been noticed in the Redbank prospects (Orridge and Mason, 1975; Wall and Heinrich, 1990), more detailed studies are required to ascertain the structural controls on mineralisation.

Importantly, the structural model proposed by Rawlings *et al.*, (1996) contrasts with earlier hypotheses that breccia pipes on the Wearyan Shelf formed by hydrothermal and magmatic explosion associated with emplacement of postulated deep-seated carbonatite magma bodies (Orridge and Mason, 1975, Rod, 1978, Knutson *et al.*, 1988).

2.4.2.5 Alteration and Fluid Types

At least eight distinct alteration types have been recognised in the Wollogorang / Stanton project area (Morris *et al.*, 1996, Rawlings *et al.*, 1996). Basalt units are affected by two early low-temperature diagenetic alteration events:

- regional pervasive, texture-preserving, incipient to moderately strong chlorite alteration;
- localised pervasive, texture-destructive, moderate to intense potassic alteration.

Sedimentary rocks are likewise affected by two early diagenetic alteration events:

- regional pervasive haematite alteration;
- regional patchy, buff-cream dolomite alteration.

Additionally, three types of syn-mineralisation alteration are recognised in the sedimentary rocks:

- localised pervasive, fault- and breccia-controlled, green to black chlorite ± bitumen alteration in mudstone and breccia;
- localised stratiform, green to black chlorite ± bitumen;
- alteration associated with carbonate destruction and compactional brecciation in dolarenite units;
- localised pervasive, fault- and breccia-controlled, dark brown alteration.

A further, genetically late, buff to orange porous alteration occurs in the upper 20–30m of drill holes in the area and is probably a weathering feature related to downward percolation of oxygenated groundwater along faults and fractures. Primary mineralisation has been remobilised during this alteration event (McLaughlin *et al.*, 2000).

Potassic and haematitic alteration in the Wollogorang Project area are interpreted to have resulted from the passage of oxidised alkaline brines through evaporitic 'redbeds', fractured and vesicular basalt of the Gold Creek Volcanics and the Wollogorang Formation. Fluid inclusion studies (Morris *et al.*, 1996, Rawlings unpublished data) have shown that brines were relatively low temperature (110–120°C) and highly saline (>20 wt% NaCl equivalent).

Oxidised fluids were essential to leach and transport copper, cobalt and nickel and possibly sulphate at the observed low temperatures (Pietsch *et al.*, 1991a, Haines *et al.*, 1993, Cooke *et al.*, 1998), and were probably the ambient pore waters residing in the 'redbeds' prior to faulting and folding. The sporadic distribution of potassic alteration in basalt indicates that only partial leaching of metals occurred from the coherent basalt. Leaching was much more effective from basalt detritus in the overlying juvenile 'redbeds'. This is consistent with contemporary models for the formation of redbed-associated sediment-hosted copper deposits (Walker, 1989). Local uplift associated with the generation of folds and faults may have increased hydraulic head and enabled base metal concentrations in the oxidised brines to approach saturation levels.

The fluids responsible for chlorite alteration and the deposition of bitumen in veins and pods are interpreted to have been reduced, hydrocarbon bearing and carbonate destructive (acidic), derived from carbonaceous rocks in the underlying Wollogorang Formation (Rawlings *et al.*, 1996). These fluids were relatively hot, as the organic source rock would have needed to be in the oil window to allow liquid hydrocarbon generation and migration (Rawlings, 2006).

This would be consistent with an excellent source rock that has passed through the oil window, but is still in the zone of oil preservation. In drill hole DD95RC128, there is an erratic, but overall downward increase in Ro from 0.9% to 1.1% over 100m depth. This suggests an elevated, but heterogeneous palaeogeothermal gradient, rather than a simple burial curve as proposed by Morris *et al.*, (1996). A 'tail' of elevated homogenisation temperatures (120–350°C; Morris *et al.*, 1996) and the presence of liquid oil in fluid inclusions (Rawlings unpublished data) also favour the existence of a hot hydrocarbon-bearing fluid.

A strong interrelationship between base metal precipitation and mobile hydrocarbons at Stanton is supported by the presence of microscopic copper, cobalt and nickel sulphide phases in bitumen pods; the absence of mineralisation in primary oxidised 'redbeds'; and the obvious spatial distribution of chlorite alteration with copper-cobalt-nickel mineralisation. It is also clear however, from the occurrence of altered, but unmineralised zones that metals and reductants were unlikely to have coexisted in a single ore-forming fluid. Thermodynamic and chemical principles also favour two separate fluids (Wall and Heinrich, 1990, Rawlings *et al.*, 1996, Cooke *et al.*, 1998).

At Stanton, high-grade cobalt-nickel mineralisation is closely associated with dark brown or lesser dark green altered mudstone of the 'target unit', which was altered synchronously with mineralisation through either overprinting of chlorite-altered rock by late oxidised fluids, or as a consequence of mixing of reduced hydrocarbon-bearing and oxidised metalliferous fluids. Rock-scale relationships cannot distinguish these two possibilities (Rawlings, 2006).

2.4.2.6 Mineralisation Model

The structural development of Stanton and other prospects in the Wollogorang Project area was clearly important for the isolation of mineralisation. Brecciated rock has provided permeability for the introduction of fluids responsible for mineralisation and the development of potassic, haematitic, chloritic and dark brown alteration types. Brecciate

d rock is a common host of copper-cobalt-nickel mineralisation, but there are many examples of mineralised coherent rock. Consequently, brecciation is apparently not necessary on a small (metre) scale to host mineralisation, but is clearly necessary on a deposit scale.

As outlined above, geological and geochemical relationships favour the involvement of two fluids in the mineralising process: an oxidised saline brine and a reduced hydrocarbon-bearing fluid. Rawlings *et al.*, (1996) favoured a fluid mixing model not unlike the 'Redbank' model of Wall and Heinrich (1990) and the 'mobile reductant' model for sediment-hosted copper deposits of Kazakhstan (Gablina, 1981). This mixing model is summarised below.

Uplift, folding and faulting in late Tawallah Group time created breccia pipes and allowed cross-stratal fluid flow of reduced hydrocarbon-bearing fluids from carbonaceous rocks of the Wollogorang Formation into overlying oxidised Gold Creek Volcanics. What prompted the maturation and expulsion of hydrocarbons is unknown. Rawlings *et al.*, (1996) suggested that carbonaceous rocks underwent 'early' thermochemical degradation in the presence of hot hydrothermal fluids related to emplacement of a nearby felsic intrusion (Packsaddle Microgranite) or due to conductive heating by an underlying mafic intrusion (Settlement Creek Dolerite). This hypothesis is somewhat supported by the organic maturation and fluid inclusion data (see above). In addition, deep drilling at Stanton has identified an unusually high-level dolerite intrusion immediately below the breccia pipe. Rawlings (2002) has also noted that regionally, there is a close spatial and temporal association between intrusive apophyses, breccia bodies, alteration and emplacement of the Settlement Creek Dolerite (e.g. Eagle Hawk Neck).

In contrast, Morris *et al.*, (1996) favoured a model of regional burial maturation, where hydrocarbons were only generated after deposition of the overlying 2–3km thick cover, some 50–100Ma or more after generation of the breccia pipes. Their model cannot account for the absence of alteration and mineralisation in the Pungalina Member.

Upward passage of reduced fluids did not significantly affect basaltic intervals in the Gold Creek Volcanics, but partially altered the 'redbeds' of the 'target unit' to a reduced chloritic assemblage. Simultaneously, ambient oxidised metalliferous fluids derived from the volcanic rocks were drawn laterally and perhaps downward by hydraulic head associated with the uplift event. Fluid mixing occurred in the top of the main dilatation zone, as the upwelling reduced fluids displaced the ambient and laterally migrating oxidised brine. Reduction of the oxidised waters resulted in siegenite and chalcopyrite deposition in the sedimentary matrix and in fractures in the basalt. Oil in the reduced fluid was trapped as liquid inclusions in quartz and carbonate, or was degraded to solid bitumen (Rawlings, 2006).

The distribution of metals at Stanton is consistent with a mixing model for mineralisation. Copper-cobalt-nickel mineralisation is focused around the upper part of the main breccia zone and in the 'target unit' immediately above it (Figure 11). At this location, the volume of oxidised fluid was sufficient to dilute the reduced fluid close to the major upflow zone and cause sulphide precipitation. Concentration of grades in the 'target unit' may also be a function of the lower permeability of the reduced fluid in the mudstone. In contrast, the main breccia body is almost devoid of sulphides because reduced fluids dominated over oxidised fluids and prevented sulphide precipitation. For similar reasons, the grade of lateral mineralised intervals within dolarenite units adjacent to the breccia pipe ('Sandstones 2 and 4') are highest 50–100m outboard of the breccia zone.

Alternative models for ore genesis include:

- a two-stage fluid model: initial ground preparation by a reduced fluid followed by introduction of metals in a later, oxidised brine.
- a single-fluid model: metal transport in a reduced brine.
- a more complicated mixing model in which the oxidised and reduced fluids are both derived from the underlying stratigraphy, but ascend along the fault conduits at different flow rates, with a mixing zone coincident with the zone of brecciation.

2.4.3 Other Prospects

Other prospects in the Stanton / Running Creek area from north to south (Figure 12) include Stout, Archangel, Holmes, Solitaire, Saltlick, Felix, Monster and Gregjo.

2.4.3.1 Felix Prospect

The area is defined by a large and coherent pattern of lag geochemical anomalies (1.2km x 0.4km) with strongly anomalous values for both copper and cobalt (Figure 12). A total of 25 RC drill holes were completed on broad 200m hole spacing for 2,353.5m, with the best intersection being 1m @ 0.37% Cu from 85m. All holes were drilled vertically. Interestingly, one diamond drill hole (DD95RC154) intersected a strong mineralised zone of pyrite-sphalerite-galena which assayed 7.9m @ 0.48% Zn from 115.4m depth.

Despite the broad drilling coverage and the extensive area of geochemical anomalies, Felix does not appear to have been specifically targeted. Drilling has instead been designed to test for a large disseminated body of mineralisation with no apparent consideration of structural control to the mineralisation.

2.4.3.2 Saltlick Prospect

The prospect is located immediately west of Felix and is defined by a consistent zone of anomalous cobalt geochemistry over an area of 1km x 0.5km. The existing drilling (eleven holes for 939.35m) has been centred off the copper and cobalt lag anomalies which are located 200-300m to the south and southeast. Despite this, broad zones of copper mineralisation were returned from two holes:

10m @ 1.7% Cu from 4m (DD90RC006)

25m @ 0.37% Cu from surface (DD94RC072)

The bulk of the cobalt geochemical anomaly is untested.

2.4.3.3 Stout Prospect

The area has a well-developed cobalt geochemical anomaly defined over an area of 900m x 300m within which a discrete copper anomaly is present. The prospect appears to have been extensively drilled with 43 holes for 2,552.55m, however nothing of significance was returned. The western end of the anomaly remains untested.

2.4.3.4 Gregjo Prospect

A discrete cobalt (700m x 400m) and copper (300m x 100m) geochemical anomaly has been partially tested with 15 drill holes for 753m, however most were collared to the south of the actual anomalies. Results were not encouraging with the best intersection returning 12m @ 0.3% Cu from surface (PD92RC028).

2.4.4 Regional Mineral Deposits

Redbank

The Redbank copper deposit (3.5Mt @ 1.87% Cu) is located ~50km to the south of the Stanton / Running Creek area. The Redbank and Azurite prospects were discovered by William (Bill) Masterton in 1916. It is estimated that 800 tonnes of copper oxide were mined by Masterton prior to his death in 1961. The ore was hand-sorted and transported to the coast by packhorse. In 1966, Granville Development mined 2,000 tons, which was sent to Mount Isa for processing. Prospecting continued at Redbank, including a geophysical survey undertaken in 1967 by Placer Prospecting Pty Ltd. Confirmatory drilling was subsequently undertaken by Harbourside Oil NL in 1970, during drilling high grade copper sulphide ore was encountered beneath an equally high grade oxide cap at the Sandy Flat prospect.

The Westmoreland-Harbourside-Newaim joint venture undertook further drilling, geophysical surveys and geological mapping in 1971. The joint venture was dissolved at the end of 1971, as the deposit did not meet their corporate requirements. Hydro-metallurgical testing was undertaken at Sandy Flat in 1981 by Triako-Buka-Amdex. Sandine-Restech-Hunter Resources-Vanoxi subsequently took control of a reduced area in 1983, and Exploration Retention Lease (ERL) 94 was established to protect the Sandy Flat area.

Redbank Copper Pty Ltd purchased the tenement group from Sanidine-Vanoxi in December 1989. Following further drilling programs and metallurgical testing, a Preliminary Environmental Report was submitted and assessed under the NT Environmental Assessment Act

(EA Act) in 1993. A mining approval was consequently granted in 1994. Mining and associated processing was undertaken between 1994 and 1996. The ore was processed through conventional floatation methods to produce a copper concentrate. Operations continued for approximately two years at the site, until copper prices dropped and the take-off customer, Mt Isa Mines, was no longer willing to accepting the concentrate. The last mining occurred in June 1996 and at this time the site was placed in care and maintenance.

Following the cessation of mining activities, an estimated 54,000 tonnes of partially treated and potentially acid forming material remained stockpiled on the surface at site. In 2004, a heap and vat leach extraction process was established at the site, this process consisting of placing crushed ore in lined vats and heap leach pads. In early 2006, the Redbank Project was acquired by Burdekin Pacific and the name of the company operating the site was changed to Redbank Mines Limited. Production was ceased during the 2005/2006 wet season, however, recommenced in 2006/2007. During this period stockpile material was treated using a similar leaching process as outlined above, however, on a smaller scale.

Further exploration was undertaken by Redbank Mines Limited between 2006 and 2008 to verify the results of the 1971 exploration. A pre-feasibility study was completed in November 2007, and a definitive feasibility study was undertaken in 2007 and 2008. In 2009, the site was again placed in care and maintenance. At this time Redbank Mines Limited was renamed Redbank Copper Limited.

Redbank Copper Limited submitted an Environmental Impact Statement (EIS) for the expansion of the Redbank copper operations in 2009. Redbank Copper Limited proposed to expand the current infrastructure at the Sandy Flat Mine, including commencing processing using a new tank leach solvent extract electro winning plant, and mining of the Bluff, Azurite and Redbank deposits. In addition, a new tailings storage facility (TSF) and waste rock dumps were proposed.

Due to insufficient detail being provided in the EIS, supplementary information was requested. Supplementary information was consequently provided to the Department of Natural Resources, Environment the Arts and Sport in February 2010. The supplementary information proposed excluding mining and processing of sulphidic ores and the TSF from the assessment. An application for these components was to be resubmitted once sufficient information was available.

Approval for mining of oxide ore from the Redbank, Azurite and Bluff deposits was granted in April 2010, however, Redbank Copper Limited deemed the project uneconomic and the site has remained on care and maintenance. On-going exploration has been undertaken during the care and maintenance period (Northern Territory Government, DPIR, 2017).

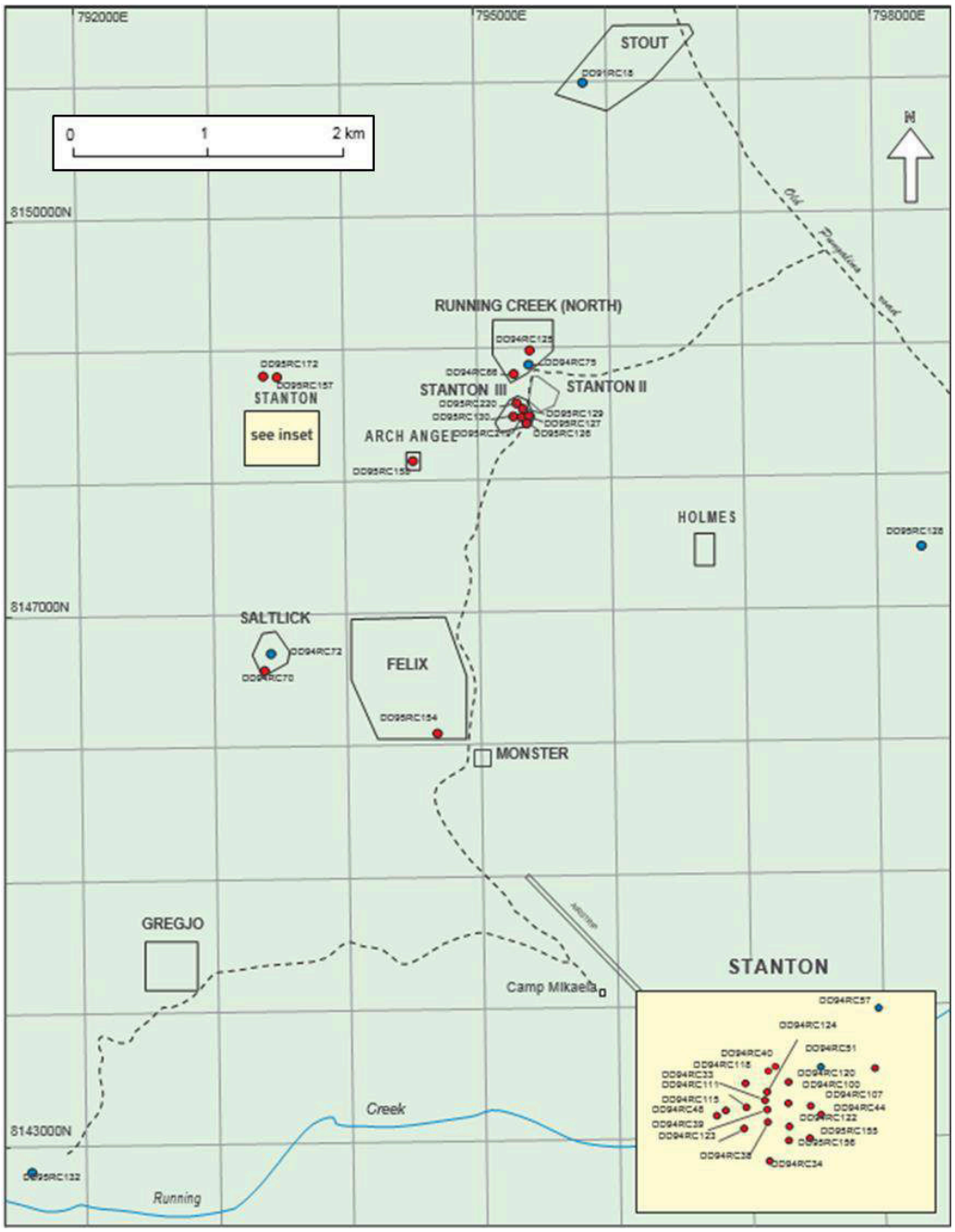
The processing plant at Redbank offers a viable option for NCL to process material from Stanton and any future discoveries.

2.5 Mining History

2.5.1 Running Creek

The only mining undertaken in the Wollogorang Project area was at Running Creek, where an area of secondary copper mineralisation located ~2km to the east-northeast of the Stanton prospect (Figure 12) was superficially mined on a local scale in the 1950s.

Figure 12 Prospects and Most Diamond Drill Holes in Running Creek EL



(after Rawlings, 2002)

Reports of historical mine workings near Running Creek were first made by Battey (1958). Malachite and azurite ore (~30-40 tonnes) had been removed by hand from a 10m-deep shaft and a 3m-deep open pit by unknown prospectors. The open pit is still visible and can be seen near 795,500mE, 8,148,900mN, however the shaft has been covered (Rawlings, 2006). This was followed up by work by Mr W J Fisher (refer section 2.6). Smith (2005) reports that his work was based on a search for pipe like deposits similar to those at Redbank 50km to the south, in rocks of the same age. Initially attention was given to possible circular structures which it was thought might be mineralised (Randell, 2012).

2.6 Exploration History

The exploration history of the Wollogorang project area is tabulated below (Table 4). Section 2.6.1 specifically describes the exploration carried out by CRAE as this is the most detailed work carried out at the project area and forms the majority of the database that NCL has inherited.

Table 4 Exploration and Discovery History of the Stanton-Running Creek Breccia Pipes

Period	Tenement	Company	Commodity	Work completed	Comments	References
1930's	ML33C	Mt Isa Mines	Cu	Running Creek copper pit mined intermittently.	High grade secondary copper ore trucked to Mt Isa.	CR1988-0362
1987-1990	EL5468	WJ & EE Fisher Pty Ltd	Cu, Au & Diamonds	Mapping of breccia pipes, rock chip and soil sampling, stream sediment sampling, diamond sampling, auger drilling.	Stanton Prospect identified with rock chip containing 4.41% Cu. Numerous other prospects identified.	CR1988-0362 CR1989-0588 CR1990-0388 CR1991-0126
1990-1993	EL5468	CRAE JV's into EL 5468 and various MCs with WJ & EE Fisher Pty Ltd "Running Creek Farm In & JV"	Cu	Percussion and diamond drilling/assaying, ground magnetics, rock chip assays, stream sediment sampling, ground magnetics, geophysical interpretation. Refer to Section 2.6.1 for further description.	Percussion and diamond drilling tested potential of "Redbank"style breccia targets for copper. Significant coincident cobalt/copper intercepts at Stanton Prospect. Minor base metal mineralisation in Karns Dolomite.	CR1991-0182 CR1991-0203 CR1991-0216 CR1992-0188 CR1992-0586 CR1993-0136 CR1993-0190 CR1993-0687 CR1993-0688 CR1993-0776
1993-1996	EL8413	"Running Creek Farm In & JV"	Co-Ni-Cu	Diamond/percussion drilling/assaying, lag sampling, IP surveys, NanoTEM survey, DIGIHEM and magnetometer surveys, petrography, mapping. Refer to Section 2.6.1 for further description.	Focus on Stanton Prospect in mining leases, Co-Ni-Cu resource defined, open to SE. Preliminary metallurgical investigations undertaken. Running Creek Prospect, structurally controlled, stratabound, disseminated chalcopyrite mineralisation identified. Potential for Stanton Co-Ni-Cu style mineralisation at Felix and Running Creek Prospects. Over the six-year period CRAE drilled 21,468m in 257 drill holes in the project area.	CR2002-0102
1997	EL8413	CRAE/Rio Tinto	Co-Ni-Cu	Marketing of project to potential purchaser.	CRA becomes Rio Tinto.	
1998-2000	EL8413	Chemmet Pty Ltd purchases project from Rio Tinto	Co-Ni-Cu	Assessment of development options Formal estimate of Identified Mineral Resources under JORC (1999).		CR2002-0102

Period	Tenement	Company	Commodity	Work completed	Comments	References
2000	EL8143	Project purchase by Metal Estates Pty Ltd (subsidiary of Hydromet Ltd)	Co-Ni-Cu	Independent assessment of Identified Mineral Resources Scoping study of mining and processing options by independent resource engineers.		CR2002-0102
2011	EL28567	Toro Energy	U	Limited to desktop studies.		EL28567_2014_AS_01
2012	EL28567	Toro enters into option agreement with Auminco Coal Pty Ltd	Co-Ni-Cu	Orientation soil/lag sampling, rock chip sampling.	Toro retain uranium rights and Auminco earn-in on all other commodities. Their principal interest was commercialisation of the Cu-Co-Ni breccia pipes.	EL28567_2014_AS_01
2015	EL30945	Coolabah Group Pty Ltd	Co-Ni-Cu	Soil sampling, pXRF analyses, historical data digitisation and compilation.		
2016	EL31272	Mangrove Resource Pty Ltd	Co-Ni-Cu	Marketing and desktop studies.		
2017	EL31272	Northern Cobalt Ltd, Mangrove Resources Pty Ltd	Co-Ni-Cu	Upgrade of Stanton Co-Ni-Cu deposit Mineral Resource estimate to JORC 2012 compliance. Refer to Section 0 for further description.	Northern Cobalt Ltd enters into a Heads of Agreement with Mangrove Resources Pty Ltd to acquire the Wollogorang Project.	

2.6.1 Stanton and Running Creek Prospects

Mapping and exploration in the Running Creek area by WJ & EE Fisher Pty Ltd (Fisher) identified eight anomalous circular topographic and aerial photofeatures (Fisher 1977, 1980, 1989, 1991a, b), which were shown to represent breccia pipes like those at Redbank (Ahmad and Wygralak, 1989).

Limited, but anomalous geochemical data and auger drilling encouraged CRAE to enter into the Running Creek Farm-In and Joint Venture Agreement with Fisher which commenced 4 October 1990 (Dealing D5357), with the aim of finding 'Redbank style' mineralisation. The Running Creek Joint Venture (RCJV) was established on 20 December 1994 after CRAE exceeded the required exploration expenditure. A detailed account of the exploration carried out by CRAE is given in Harder (2000) and from 1994 onwards in Goulevitch (2002) which provide the basis for the following summary.

The first CRAE report appended a full report of work history and results carried out by the lease owner Fisher up to and including 1990. CRAE geologist David Palmer carried out an initial orientation field trip in September 1990, the results of which were sufficiently encouraging to recommend that CRAE become further involved. A joint venture farm-in was arranged whereby CRAE could earn up to an 85% interest by expenditure on exploration on the four Mineral Claims and the Exploration Licence 5468, which expired on 12 August 1993. A table based on the Bureau of Mineral Resources (BMR) regional mapping was used as the foundation of the basic geology and stratigraphy of the prospect area. 112

In March 1992, following the geophysical survey based exploration of 1991 which was mainly ground Induced polarisation (IP), it was concluded that a 'CRA sized' base metal target does not exist and it was recommended that no further work be carried out. Despite this decision, assay results containing slightly anomalous elements such as cobalt and nickel remained a mystery. This curiosity led to exploration being continued in 1992 to further investigate these small pockets of rare mineralisation and several prospects were discovered and named.

In 1993, the Exploration Lease expired and was replaced by a new six-year term, with the four Mineral Claims also being renewed. 1993 saw the first recording of anomalous cobalt and nickel mineralisation at Stanton. Assays from PC92RC22 returned:

- 8m @ 0.39% Co and 0.14% Cu, from 0 – 8m; and 12m @ 0.15% Ni, from 18 – 30m.

A soil lag sampling program was carried out (42 samples assayed from two lines by ASS) and confirmed the cobalt–nickel mineralisation. Petrographic studies identified the cobalt–nickel mineralisation in the mineral siegenite – a spinel group mineral $(Ni\text{-}Co)_3S_4$. IP geophysical surveys at Stanton showed the potential for remobilised mineralised fluids, interpreted to be on a contact or shear zone.

Key exploration work and observations at Stanton included:

- A sub-horizontal arenite / trachyte with a thin soil cover
- Corrected IP was carried out over the entire area
- A positive 189nT ground gravity geophysical anomaly at 30m depth was interpreted
- Modelling of the gravity data indicated a thin south dipping tabular body
- Soil geochemistry showed iron pisolitic / ferrocrete anomalies
- Ground magnetic highs were coincident with anomalous geochemistry
- 208 chip samples were assayed for platinum and palladium.

Laboratory testing of the Stanton mineralisation (refer to section 0 for a more detailed account of the metallurgical test work) gave the following characteristics:

- Cobalt recovery is 70% at the concentrate stage and 45% at the cleaning stage
- With extra roughing / higher reagent concentration / extra time, a 50% recovery was achieved
- Loss of cobalt is associated with liberated grains
- Cobalt:nickel ratio is 1.4:2.0, regardless of grain size
- Comparisons with the cobalt-nickel deposits of southeast Missouri were noted
- Lead and zinc mineralisation adds value to marketing of a concentrate.

Based on the 1993 discovery of cobalt-nickel-copper mineralisation at Stanton, there was a significant increase in the level of exploration activity in 1994; key work and findings are listed below:

- The entire existing grid was lag sampled (717 samples)
- Drill samples were assayed (652 samples)
- GPS pick-ups of all collars were collected
- High resolution ground magnetic survey (108km)
- The potential was established for Stanton-like repetitions
- A trial ground IP geophysical survey was carried out for 4.55km
- A nanoTEM geophysical survey was carried out for 3.72km
- Drilling of 89 holes was carried out on five prospects totalling 9,267m
- Definitive diamond core drilling at Stanton outlined an ellipsoid cobalt-nickel zone of 90m diameter
- At Stanton, mineralisation was seen to be confined to a zone of the Gold Creek Volcanics, bound by growth faults, exhibiting 30 – 35m of normal displacement
- Sulphide mineralisation recovery of cobalt-nickel-copper was deemed to be saleable
- Potential exists for Stanton style cobalt-nickel-copper mineralisation at Felix and Running Creek
- Potential exists for Stanton style cobalt-nickel-copper mineralisation throughout the Exploration Lease
- At Running Creek, a close spaced drilling program outlined a structurally controlled, stratabound, disseminated chalcopyrite zone, returning best intercepts of 13.4m @ 1.2% Cu, in claystone and 7m @ 0.38% Cu, in arenite, but failed to identify large scale stratabound copper mineralisation.

A further major increase in expenditure and exploration was made in 1995; key work and findings are listed below:

- Replicate samples (211) of 1994 core and chips were analysed
- All stream sediments (13) were sampled and assayed
- A digital elevation map (1:80,000 scale) was made from black and white air photos
- Detailed surface geological fact mapping using new photography was carried out, including a litho-structural map
- Further detailed petrography was carried out on 37 samples
- The entire EL was gridded and lag sampled (3,986) at 100m centres
- A helicopter electromagnetic survey (EM and DIGHEM) was flown for 760km
- Gradient array IP surveys were carried out at Stanton, Felix and Running Creek
- Thirteen diamond hole for 1,794m and 119 RC holes for 8,253m were drilled at Stanton to test geochemical and geophysical anomalies and to close off mineralisation
- Downhole multi-tool geophysical logging of 10 diamond core holes (1,143m).

The check assays of the 1994 drilling showed 15 – 50% higher cobalt values, which was attributed to using a different laboratory than originally used. Multi fractioned stream sediment assays were anomalous over Stanton, reporting values of 220ppm Cu, 14.5ppm Co, 27ppm Ni and 22ppm Zn.

A total of 210 reverse circulation holes (aggregate 15,400m) and 48 diamond holes (aggregate 6,100m) were drilled to test breccia bodies, geochemical and geophysical anomalies, refine local geology and concepts, conduct metallurgical testing, and close out mineralisation at a number of prospects. Best drill results at Stanton prospect were 22m @ 0.3% Co, 0.17% Ni, 0.14% Cu, 10ppb Pd and 10ppb Pt (Palmer, 1993a) and 22m @ 0.33% Co and 0.19% Ni (Palmer, 1993b), and at Running Creek, 13.4m @ 1.2% Cu (Palmer *et al.*, 1995). Stanton also has rare anomalous intersections of gold, including 6m @ 0.2 g/t Au (Palmer, 1992).

A combined magnetic and DIGHEM survey (100m line spacing, 60m terrain clearance) was flown over all of the area of the former EL 8413. While it was not considered that magnetic responses

could be used as direct indicators of mineralisation, it was thought that they would have considerable use in identifying structural disruptions. DIGHEM was intended to serve as a direct indicator of conductive mineralisation, however the drilling of targets indicated by the airborne survey was not encouraging.

In October 1996, the annual report for the RCJV concluded that, "drill testing within EL8413 failed to intersect substantive zones of high grade cobalt-nickel±copper or large stratabound copper mineralisation. While there remains good potential to add to known mineralisation, scope for a very large resource of interest to CRA is considered tested. It is therefore recommended CRAE divest their interest in this tenement."

In 1997, CRA Exploration Pty Ltd became Rio Tinto Exploration Pty Ltd (RTE). In 1998, RTE's interests in EL8413 were acquired by Chemmet Pty Ltd. Chemmet initially engaged a consultant to study the past work carried out by RTE and found it to be inconclusive. In September and October 1998, Chemmet carried out a global market study on cobalt (refer to section 2.9.2). In 2000, Chemmet's interests were sold to Mineral Estates Pty Ltd, a subsidiary of HydroMet Corporation Ltd, who carried out resource reviews and scoping studies in 2001 (refer to section 2.9.2). 114

2.6.2 Karns Prospect

Most of the historical mineral exploration at Karns was focused around diamonds (CRA and Ashton). Microdiamonds and indicators are present on a regional scale but no volcanic pipes have been discovered. The breccia pipes at Redbank and Running Creek are of a completely different type to diamondiferous pipes and probably relate to deformation of the sediment package while still incompletely lithified (Rawlings, 2006). Table shows a summary of the historical exploration activities carried out over the current Karns tenement, with the percentage of overlap that these previous tenements had over the current area of EL 30496.

Table 5 Summary of Karns Exploration Activities

Period	Tenement	Company	Commodity	Work Completed	Overlap (%)	Comments	Company Reports
1969 – 1971	AP 2295	Shannon, CHC / Shannon, C H C	U, Cu, Mn	unsure	30	Strong radiometric response from dolomite member of Karns dolomite.	CR19700023, CR1971-0098
1969 - 1971	AP 2167	Cundill Meyers and Associates	Mn	unsure	50	Limited information in abstracts.	CR1970-0075
1972	EL 28	Euralba Mining	Cu	heli.reccon. desktop, airphoto study	50	No on ground exploration Was deemed too high risk.	CR1973-0135
1977 – 1981	EL 1613	Dampier Mining	Groote Is-style Mn	SS, RC, reg recc.	100	Looking in Cretaceous sediments for Groote style Mn – without success.	CR1979-0011 CR1980-0075 CR1980-0129 CR1982-0171
1977 – 1982	EL 1612	Dampier Mining	Groote Is-style Mn	SS, RC, reg recc.	5	Looking in Cretaceous sediments for Groote style Mn	CR1979-0011 CR1980-0129 CR1981-0075
1980 – 1986	EL 2565	Arnhem Land Mining / AAR / ANZECO	Cu, phosphate, base metals	Petrology, Rock chip, landsat	10	Found U and Cu associated with phosphate units.	CR1982-0041 CR1982-0371 CR1983-0171
1980 – 1986	EL 2564	Arnhem Land Mining / AAR / ANZECO	Cu, phosphate, base metals	Petrology, Rock chip, landsat	30	Found U and Cu associated with phosphate units.	CR1982-0041 CR1982-0371 CR1983-0171
1981 – 1987	EL 3045	Arnhem Land Mining / AAR / ANZECO	U, Cu	Rchip, petrol, DD?	30	Found near surface (on licence?) U and Cu mineralisation but concluded low grade.	CR19820371 CR1983-0171
1983 – 1989	EL 4166	CRA Exploration	diamonds	mag/rad, DD RAB, soils, Rchip, petrog,	20	U-Channel anomalies correlate with outcrops of flaggy kaolinite phosphatic (uraniferous) silty sandstone.	CR1984-0061 CR1985-0096 CR1986-0109 CR1987-0014
1991 - 1992	EL 7351	Argold Holdings	Phosphate (Masterton Fm)	RChip of SSed anomalies	20	Sampling confirms the occurrence of high grade massive and disseminated phosphate material within the Masterton Formation. The occurrences appear to be syngenetic organic origin.	CR1992-0570
1991	EL 7236	Fisher, WJ / Fisher, WJ	Cu/Mn	unknown	30	Found a laterite with low grade Cu/Mn but extent is limited.	CR1991-0591
1991	EL 7314	CRA Exploration	base metals	SS Rchip	15	39 stream sediment and 18 rock chip samples were collected over the licence area undergoing multielement analysis. No results were considered anomalous.	CR1992-0057
1991	EL 7320	CRA Exploration	base metals	SS Rchip	20	39 stream sediment and 18 rock chip samples were collected over the licence area undergoing multielement analysis. No results were considered anomalous.	CR1991-0528

Period	Tenement	Company	Commodity	Work Completed	Overlap (%)	Comments	Company Reports
1993 - 1995	EL 7964	CRA Exploration	base metals	Soils SS RChip	80	Elevated base metal responses associated with Fe-Mn. It is believed that the elevated response is due to Fe and Mn scavenging of base metals.	CR1994-0401 CR1995-0469 CR1995-0638 CR1995-0796
1993 - 1997	EL 8084	Ashton Mining	diamonds/base metals	Gravel loam RC	5	Followed up area of Cu/Co anom with RC but nothing. Base Metal Exploration: Two aeromagnetic / radiometric surveys, two airborne TEM surveys and geochemical sampling.	CR1994-0551 CR1995-0603 CR1996-0813 CR1996-0814 CR1997-0683
1995 - 1998	EL 8533	Carnegie Minerals / Rio Tinto Exploration	diamonds/base metals	magnetic/radiometric survey.	5	Locating magnetic anomalies indicative of kimberlitic intrusions. Although a number of anomalies were generated, they were interpreted to be cultural, recent sediment accumulations or reflecting noise.	CR1996-0614, CR1997-0550, CR1997-0629, CR1998-0666
1994 - 1997	EL 8856	CRA Exploration	Au	DD RC structural stratigraphic, mag/rad	5	No anomalous uranium or base metals.	CR1995-0874, CR1996-0880, CR1997-0080, CR1998-0003
1995 - 1997	EL 9204	BHP Minerals	base metals, Au	mag/rad, soils,SS, EM	10	Narrowed down to close spaced sampling BCL and -80# No significant anomalies.	CR1996-0681, CR1997-0230
1996 - 1997	EL 9266	BHP Minerals	base metals, Au	mag/rad, soils,SS, EM	50	Quite a lot of work carried out. No conductors identified or radiometric anomalies.	CR1996-0681 CR1997-0682
2003 - 2008	EL 22247	Astro / Legend International	diamond, phosphate	multi element SS, Rchip	adj	Sampled over Masterton SS. mainly Echo sandstone. No encouraging results.	CR2008-0913
2003 - 2010	EL 22251	Legend International	diamond, phosphate, Redbank style Cu	SS, Rchip, loams, EM, Air/Ground EM, DD, RC	100	Found potentially economic phosphate but could not prove continuity vertical or lateral continuity.	CR2009-0389, CR2010-0061

Exploration over these tenements has focused on determining the extent to which phosphate lithologies, as indicated by the NT Government mapping and radiometrics, are continuations of the Selby phosphate beds, namely the basal Karns Dolomite, which is enriched with uranium and rare earth elements. Toro Energy Ltd (Toro) explored using the Arizona Strip uranium deposits as an analogue (clusters of high grade uranium deposits that previously supported significant mining in the USA). Toro focused on breccia pipes stratigraphically below the Karns Dolomite.

In the recent past, the area encompassed by EL30496 was covered by EL27429, granted to Toro, which was previously EL22251, granted to Astro Diamonds N.L. in 2003 and subsequently transferred to Legend International Holdings Inc (Legend) in 2007. From 2003 to 2007, Astro conducted desktop studies, bulk geochemical samples for indicator minerals, 1,392 line km of high resolution airborne EM and small areas of ground gravity. Most of this work (including all of the geophysics) was from the Selby prospect to the east of Toro's tenement EL29636, NCL's current EL30590. It was concluded that the EM anomalies were caused by clay-rich Cainozoic sedimentary infill.

From 2007 onwards, Legend sought phosphate and Redbank-style breccia pipe-hosted base metals. Legend recognised the potential for phosphate and base metals in the basal unit of the Karns Dolomite, which rests unconformably over the Echo Sandstone. Outcrop of the Karns Dolomite was extensively mapped and sampled from EL22251; the best result being 32% P_2O_5 in rock chip. Ninety five RC holes for 5,134m were drilled around the Selby prospect but failed to confirm continuity or grade of the phosphate. Best results for rock chips (from 72 samples) were 10,001ppm Cu in Proterozoic sandstone/dolostone, with up to 1,620ppm Cu along a fault within Toro's licence EL27429. Uranium up to 677ppm was assayed from the same lithologies as the copper, but also off the Toro licence. Drilling assays included up to 260ppm uranium.

During November 2011, Toro commissioned Thompson Aviation to carry out 4,174 line km (362km^2) of magnetic/radiometrics. A distinct "ridge" of elevated radiometric activity was defined, corresponding with the mapped unconformable lithological boundary between the Echo Sandstone and Karns Dolomite, parallel to the northwest-southeast regional structural trend.

2.6.3 Selby Prospect

Based on BMR airborne radiometric and follow-up ground-based geophysical data, Arnhem Land Mining Ltd (Davies, 1982) identified a series of uranium-rich phosphatic sandstone prospects within the 'Masterton Sandstone' on the Pungalina plateau. Subsequent shallow percussion and diamond drilling by the Australia and New Zealand Exploration Company (Cardno, 1983) failed to intersect significant mineralisation. Argold Holdings Pty Ltd and Kriston Pty Ltd (Girschik, 1992) re-evaluated the prospects under more favourable economic conditions in the early 1990s, but deduced uneconomic thicknesses of only 1–2m. Revision of the lithostratigraphy, thickness estimates and distribution of the phosphatic horizon by the NTGS indicates that the Selby prospects lie in the basal sandstone unit of the Karns Dolomite, immediately above an irregular unconformity with the Echo Sandstone (Rawlings, 2006).

2.7 Current Exploration

2.7.1 Stanton

There has been very limited field exploration completed since 2001 and only cursory scoping and marketing studies have been completed by Chemmet and Mineral Estates. A soil sampling survey was undertaken in 2008.

2.7.2 Karns and Selby

In 2013, a downturn in the uranium market forced Toro into putting on hold any of the planned exploration on the Karns Project and re-assessing its company operating strategy and commodity focus. Toro then undertook a detailed prospectivity analysis to identify targets, both uranium and non-uranium. Non-uranium targets were then used to interest potential JV partners, however no JV interest was generated.

Uranium targets were then assessed and prioritised relative to all other uranium targets on Toro held ground within the Northern Territory and Western Australia. Using this assessment, Toro identified exploration ground with no, to only low ranked, priority uranium targets to be

surrendered. By late 2013 these decisions had been made and 66% of (99 blocks) of the total area of EL27429 was relinquished. This represented most of the north and south of the tenement, leaving only the large radiometric and geochemical anomaly in the middle of the tenement.

2.8 Mineral Resources

NCL commissioned independent mining consultants to develop a Mineral Resource estimate for the Stanton Deposit which complies with the JORC 2012, so as to allow for public reporting. Ravensgate completed this work in May 2017 and this IGR provides the initial public release to the market of the Mineral Resource.

The only previous resource estimate was conducted in 2001 by Exploremin Pty Ltd geological consultants. This work is summarised in an annual report to the Mines Dept (Goulevitch, 2002). The report did not state that the estimate complied with the JORC Code. This historic estimate used a cross sectional polygonal method and Inderdex software. Assumed bulk density values were used, based on the rock type and weathering.

A detailed technical report was prepared by Ravensgate fully documenting the data, geological interpretation, geostatistical studies, block modelling and estimation methods used in developing the new Mineral Resource estimate (Reid, 2017). This work is summarised in the following sections of this IGR.

2.8.1 Drilling Data

The Mineral Resource estimate is based on 35 drill holes completed in the deposit by CRAE from 1990 to 1995.

Data supplied to Ravensgate by NCL included:

- MS Excel spreadsheets of drilling data
- Scanned open file reports
- Grid of topographic elevation.

MGA grid co-ordinates were used for the resource model. Projection is based on GDA 94 zone 53 K.

Ravensgate have conducted random checks of the geological logs and assay data contained in the open file reports to the digital data supplied. No errors were detected. Drill core from four holes was examined by Mr D. Reid of Ravensgate at the NTGS core farm, which confirmed logging and the appearance of mineralisation.

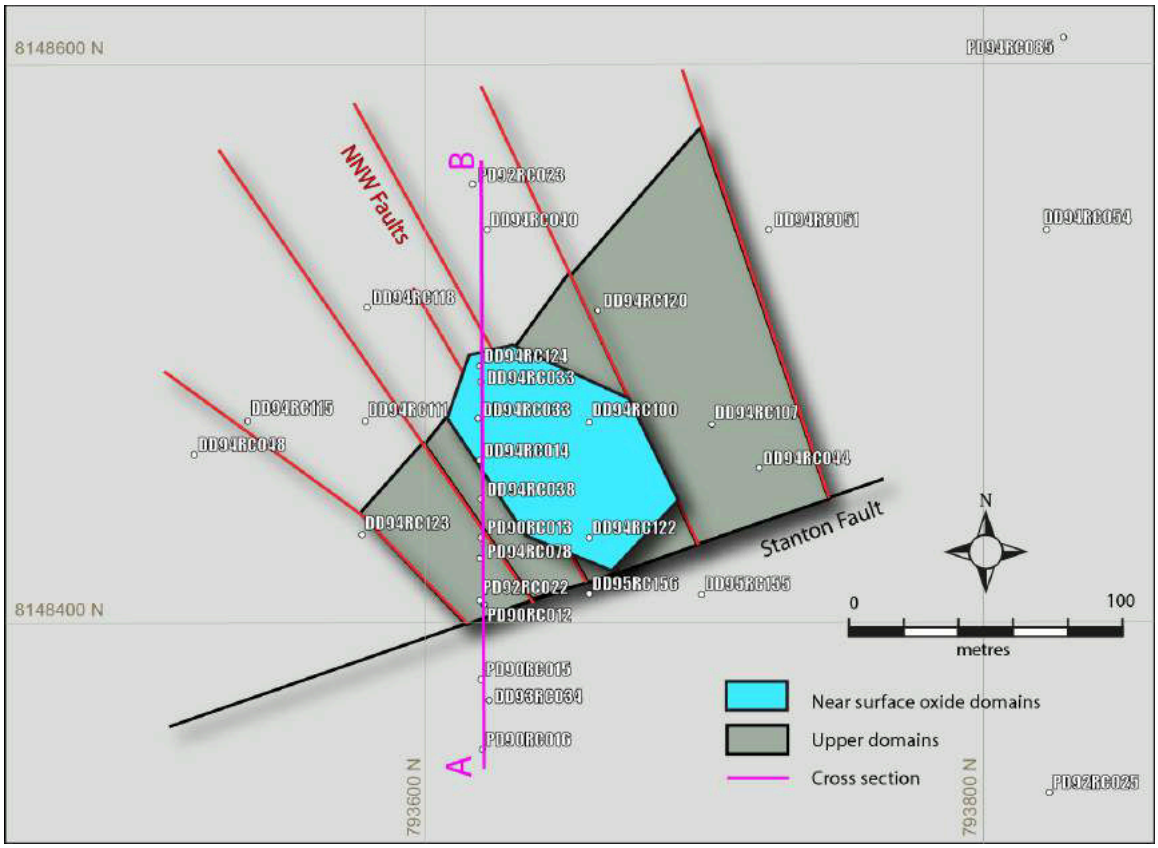
The majority of drilling used for the resource estimation was diamond drilling (DD). Drilling commenced in 1990 with percussion holes. Reports documenting the drilling (Palmer *et al.*, 1995) specify the percussion drilling is reverse circulation (RC) but do not detail the hole size or sample collection methods. Goulevitch (2001) reports that comments by experienced geologists previously involved in the RC drilling at Stanton had reported the presence of a shallow water table and sufficient ground water flow to result in wet samples in some of the holes drilled in 1994.

Subsequent drilling was mostly DD of both NQ and HQ size. Details of core sampling method were not reported.

A total 35 holes for 3,430m were completed at the Stanton Deposit. Of these, 14 are percussion for 649m and 21 were DD for 2,781m. Many of these holes are drilled outside the main area of mineralisation with only 16 holes containing samples that were used in the resource estimation. Only five of the percussion drilling holes were used in the grade estimate, with 87 percussion samples for 141m located in the mineralised domains. Eleven DD holes were used in the grade estimate with 145 samples for 201m located in the mineralised domain.

Locations of the drilling used in the resource estimate are shown in Figure 13 below.

Figure 13 Plan of Stanton Deposit Drilling, Interpreted Faults and Domains



2.8.2 Sampling and Assay

Sampling of RC and diamond core was on one meter intervals with the core being cut in half using a diamond core saw. Samples were submitted to Amdel Laboratories, Darwin for assay of Au, Pd and Pt by fire assay/AAS; Ag, As, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Ti, Th, U, and Zn by ICP-OES; and Ba by XRF methods (Palmer *et al.*, 1995).

It was not standard industry practice to conduct sample QAQC at the time the Stanton drilling was being completed. Palmer *et al.*, (1995) reports that approximately 10% of RC and DD samples were selected for check analyses. CRAE procedures and process were of a high standard and reputable laboratories were used for analysis which would have included laboratory repeats and standards, however these are not documented. Ravensgate are of the opinion that the sample and assay data is of sufficient quality to support an Inferred Mineral Resource estimate.

2.8.3 Geological Logging

Detailed geological features for each drill hole were recorded in hardcopy logs observed in the open file reports. Only the lithology codes have been entered into the digital database. Weathering intensity, alteration, core recovery and mineralisation description were not available in the digital database.

2.8.4 Bulk Density

Open file reports record only one reference to measurements of dry in-situ bulk density measurements. Palmer *et al.*, (1995) details measurements made on five samples of core by Systems Exploration (NSW) Pty Ltd. The method used to measure the density is not recorded. The measurements were made on samples from hole DD93RC033 and are detailed in Table 6 along with other physical property measurements.

Only one measurement was made on oxidised material (trachyte) which had a value of almost 2.0. The other four measurements were on sulphide sediment lithology samples and ranged from 2.12 to 2.37, with a mean of 2.26. These values are much lower than the values used in the previous resource estimate. The high porosity of 28% in oxide and ranging from 13.7 to 20.2% in the sulphide would explain the low DISBD values measured.

Table 6 Dry In-Situ Bulk Density Measurements

Samples		PHYSICAL PROPERTIES							
			Dry Bulk Density g/cm^3	Apparent Porosity ^{P}A/%	Magnetic Suscept S1x10^{-5}	EM Conduct-ivity σ, s/m 2.5 MHz	Galvanic 2 elect. 1kHz Resist-ivity ρ, Ωm	4 elect. 0.1 Hz ρ Ωm	Phase lag ϕ 0.1 Hz mrad
#									
	RC								
1	33A-1 18 m	Alt. trachyte	1.96	28.2	50	→0	31 40	44	15
2	33A-2 35m	sulphidic qtz arenite	2.12	19.9	30	→0	29 19	82	18
3	33a-3 46m	Sulphidic clay-stone	2.21	18.2	30	Slight	67 74	113	32
4	33A-4 48.5m	Sulph-idic clay-stone	2.37	20.2	30	→0	32	91	26
5	2-1 23.7m	1am., brecc. Clay-stone/ arenite	2.35	13.7	20	→0	42	128	16
						Water sat.	Water sat.	Water sat.	Water sat.
						large samples		small samples	

Source: P112 Palmer 1995

Block model bulk density values were assigned based on the weathering interpretation. To be consistent with the previous resource estimate, similar dry in-situ bulk density values were applied to the Mineral Resource estimate. For the Oxide material a DISBD of 2.35 was applied (previous resource used 2.3 & 2.4 for sediment & trachyte) and for sulphide material a DISBD of 2.55 was applied (previous resource used 2.5 & 2.6 for sediment & trachyte).

No moisture determinations had been attempted. Bulk density and tonnage are reported on a dry basis.

2.8.5 Topography

In the vicinity of Stanton the topography is very flat and with an elevation of approximately 77m above sea level. Further to the southwest the land rises from the coastal plain to a range of low hills.

Topography data was supplied to Ravensgate as gridded points in a CSV formatted text file. The origin of the elevation data was not known but consisted of 20m spaced gridded points for the entire project area. A subset of this data was triangulated in Vulcan for use in the resource model.

2.8.6 Collar Location and Downhole Survey

Collar locations could not be confirmed during the site visit due to the environmental rehabilitation of the drill sites having been conducted effectively. Drill hole locations in the digital data appear to be consistent with the locations shown on the plans (Goulevitch, 2001). The only collar that was

found in the site visit did not match GPS coordinates with any located in the database. It is possible that this collar was missed during rehabilitation as it was not recorded in the database.

Palmer *et al.*, (1995) reports that drill collar locations were surveyed using differential GPS.

No downhole survey was conducted on the drilling. All holes are assumed to follow the initial set up direction. This will have had minimal impact on the interpretation of the flat lying stratigraphy and mineralisation. Hole deviation may have an impact on the interpretation of semi-vertical structural features, this would be minimal for the near surface but the impact would increase with depth.

2.8.6.1 Core Recovery

For some of the diamond drill holes the detailed logging provided in the open file reports contained details of the core drill runs and length of core recovered. Ravensgate entered this data into the drill database to allow identification of samples in areas of poor core recovery.

Recovery was generally good in the mineralised zones. Fifteen mineralised sample intervals had less than 90% core recovery. Low recovery presents the issue of potential sample bias with the recovered core not being representative of the drill interval. Mineralised sample intervals with less than 90% core recovery were excluded from grade estimation.

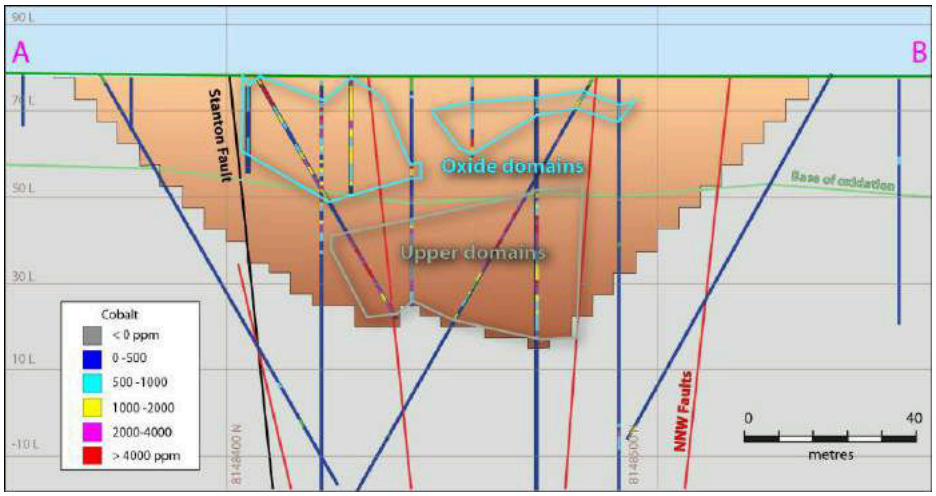
2.8.6.2 Geological Model

Plans and sectional interpretation from the 2001 resource model (Goulevitch, 2002) were used to define the structural framework. The southern bounding Stanton fault and the five north-south trending faults that are interpreted to offset the stratigraphy were digitised on the surface and projected at depth based on the orientation in the cross sections. Lithological units were not interpreted and this is recommended for the next phase of work to increase the confidence in the geological model and resource estimation.

Weathering interpretation was based on the first appearance of sulphide in logging description. A surface was modelled thought these points in the drill holes for use in data evaluation and modelling.

The mineralised domains are based on a 400ppm Cu grade threshold to define the limits of mineralised envelopes. A minimum downhole width of 2m and a maximum internal dilution of 2m were used when defining the individual domain intervals. Each domain was extended to the bounding faults or to approximately half the distance to an unmineralised drill hole. These domains were wireframed to form solids for use in data evaluation and modelling. A separate oxide mineralised zone was interpreted in the centre of the deposit which transgressed the bounding faults. A numerical code was used for each domain. Domain one is the near surface oxide zone. Domains 11-15 are the upper or target horizon zones. Domains in the 21-25 are the lower thin sediment zone.

Figure 14 Cross Section 792,620E Showing Drilling, Domains and Open Pit Optimisation



2.8.6.3 *Statistical Analysis*

Drill sample intervals were coded with the domain number and the summary statistics for each domain assessed. Sample counts, mean lengths and mean sample assay grades are given in Table 7 below. In general, the upper domains were thicker and of higher grade than the lower zone. Some domains had little drilling resulting in a low number of samples to characterise the domain.

Table 7 Statistical Summary of Mineralised Samples for Each Domain

Domain	Number	Length (m)	Cobalt (ppm)	Nickel (ppm)	Copper (ppm)
1	19	2.11	1775	921	2683
11	14	1.88	1176	433	1306
12	16	1.06	2264	1369	364
13	3	5.00	2827	3340	3465
14	79	1.34	3584	1342	1331
15	73	1.52	1695	530	1284
21	11	0.96	940	492	99
31	10	0.97	1480	664	1369
51	7	1.00	1317	671	316
TOTAL	**232**	**1.47**	**2311**	**935**	**1299**

The grade variation caused by weathering was assessed by comparing the samples coded by oxide or sulphide, see Table 8. The cobalt and nickel grades were higher in the sulphide samples. Copper showed the opposite trend with higher grades in the oxide samples.

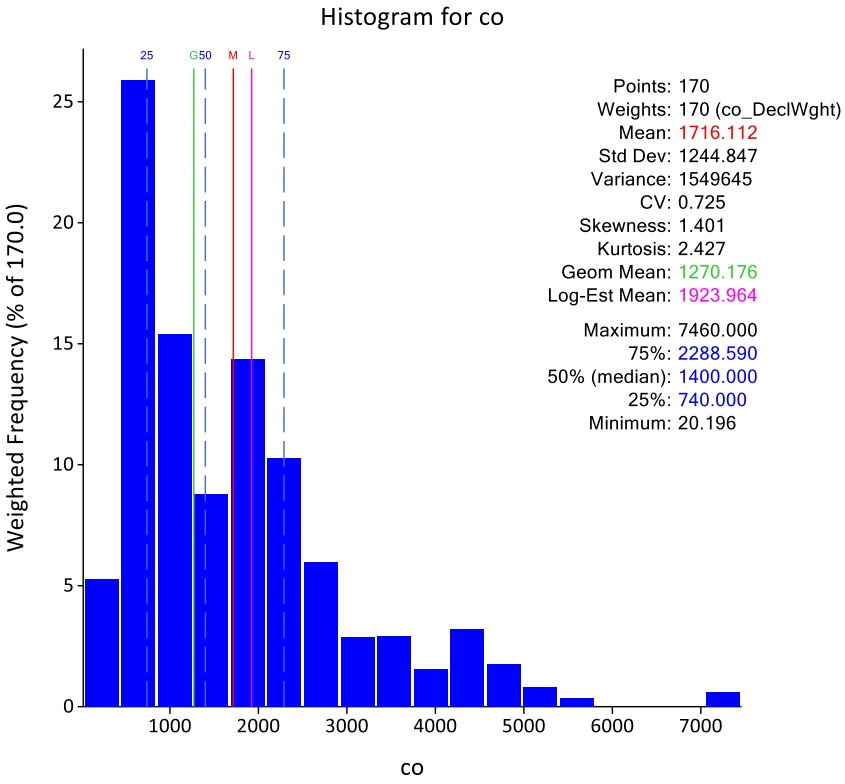
Table 8 Statistical Summary of Mineralised Samples for Oxidation State

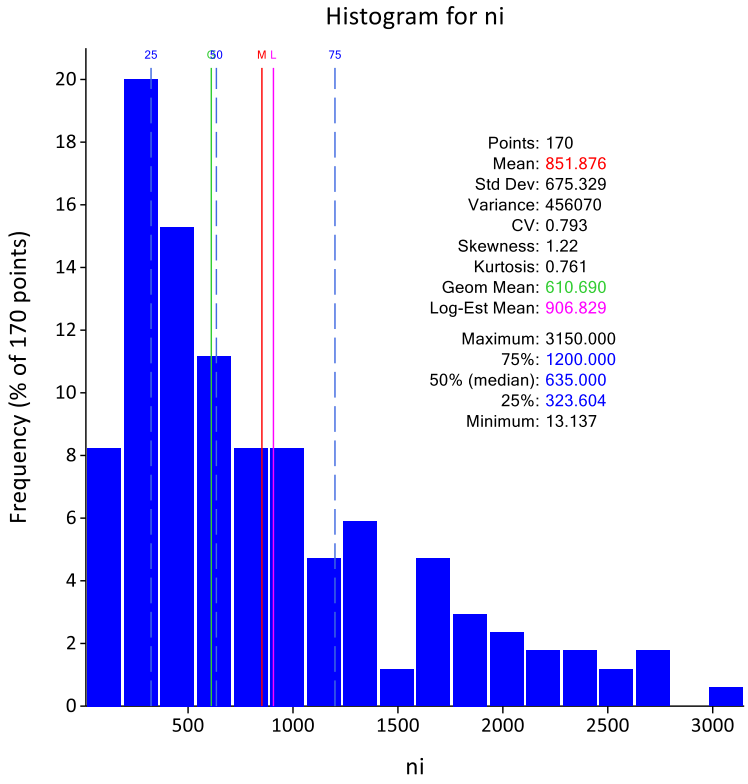
	Number	Cobalt (ppm)	Nickel (ppm)	Copper (ppm)
Sulphide	133	2739	1111	971
Oxide	99	1736	699	1740

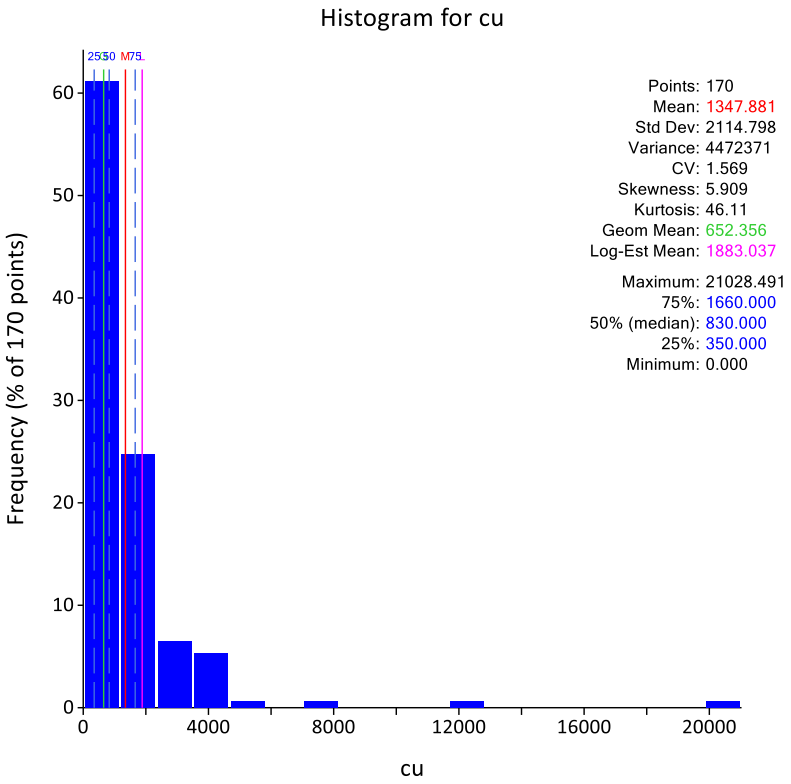
Downhole compositing using two metre intervals was used. Two metres was chosen as the majority of samples were less than this length. Composites were constrained to the mineralised lode codes which had been flagged to the sample intervals.

Histograms (Figure 15) show slightly positive skewed distributions, with copper showing some high grade outlying composites. The coefficients of variation are quite low indicating that ordinary kriging should produce good grade estimates.

Figure 15 Histogram of Mineralised Composite Cobalt, Nickel and Copper

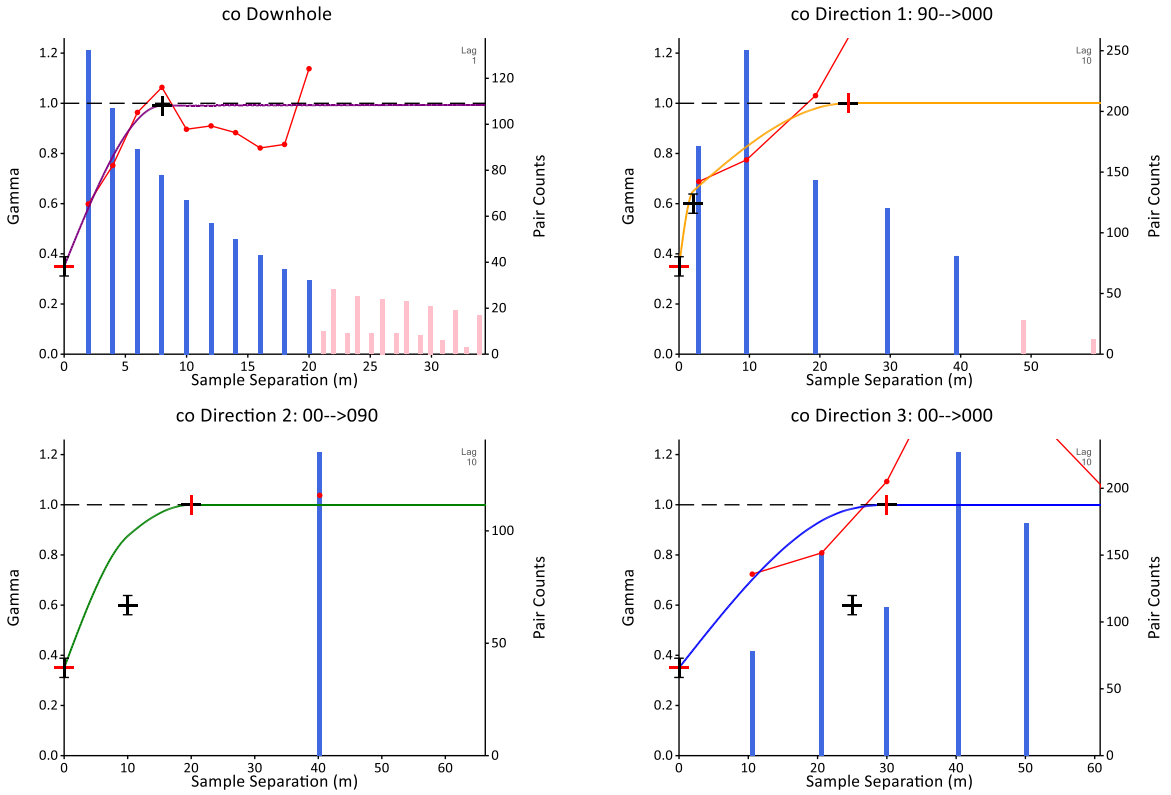






With only 170 composites in the mineralisation, variography was conducted on the combined dataset to maximise the number of pairs for comparison. Variograms were calculated downhole and in directions aligned with the drilling grid as most other directions lacked enough samples pairs to determine meaningful directional variograms. These are shown in Figure 16. A nugget proportion of 35% was determined from the downhole variogram. Sample spacing was close enough to produce reasonable variogram structures in the north-south (00->000) and vertical (90->000) directions. With section spacing at 40m, the east-west (00->090) variogram was showing no structure at the closest sample spacing. Variogram ranges of up to 30m are only slightly larger than the closest drill spacing, therefore infill drilling is recommended to better define the local grade estimates.

Figure 16 *Variograms of Combined Mineralisation*



A single variogram model was determined for use in the grade estimation. A similar grade distribution is assumed for all the domains and is a reasonable compromise at this stage of exploration with insufficient samples to calculate variograms for many of the individual domains. The variogram model used in the grade estimation is show below in Table 9.

Table 9 *Variogram Model Parameters*

		Structure One		Structure Two	
Direction	Nugget	Sill	Range	Sill	Range
00->000	0.35	0.25	25	0.4	30
00->90	0.35	0.25	10	0.4	20
-90->000	0.35	0.25	2	0.4	24

Grade Estimation

Ordinary block kriging was used to estimate cobalt grade into 25x25x5m sized blocks using Vulcan software. Nickel and copper grades were estimated using the same composite search and weighting (using the cobalt variogram).

Each domain was estimated separately with hard boundaries applied to the sample search so only samples within the domain were used for the domain block.

Validation of the grade estimate was conducted by comparing the mean block model estimated grades to the mean grades for the composites for the corresponding domain and is shown in Table 10.

Global cobalt and nickel block estimate grades are reasonably close to the mean grade of the composites for each domain. In most cases the block grade is slightly lower which is most likely to be caused by clustering of drill sampling in the higher grade areas of the deposit skewing the mean of the composites high. When cell declustering (20m x 20m x 20m) is applied to the composites the global mean grade of 1,716ppm Co is much closer to the estimated block grade of 1,587ppm Co.

Global copper block estimate grade are reasonably close to composite mean grades for most domains. Domain 14 and to a lesser extent domain 23 are exceptions with sample mean grade much higher than the global block estimates. These domains contained some very high grade samples which has greatly increased the mean composite grade.

Table 10 Global Block vs Composite Mean Comparison

			Composite			Block			Difference (%)		
Domain	No.	Co	Ni	Cu	Tonnes	Co	Ni	Cu	Co	Ni	Cu
1	20	1,827	893	2,404	40,106	1,731	862	2,419	-6%	-4%	1%
11	13	1,303	462	1,294	126,338	1,291	467	1,232	-1%	1%	-5%
12	9	2,165	1,291	356	98,888	2,076	1,241	378	-4%	-4%	6%
13	6	740	760	1,498	41,513	741	763	1,506	0%	0%	1%
14	51	2,351	1,310	1,329	100,288	2,366	1,326	936	1%	1%	-42%
15	56	1,645	532	1,383	87,625	1,689	515	1,353	3%	-3%	-2%
21	6	706	347	82	55,938	684	347	78	-3%	0%	-5%
23	5	1,622	720	1,002	11,750	1,635	740	1,211	1%	3%	17%
25	4	1,204	619	326	48,875	1,209	623	321	0%	1%	-2%
ALL	170	1,804	852	1,348	611,319	1,587	793	980	-14%	-7%	-37%

The estimated blocks were viewed in section and plan and compared to the drill hole samples. There was reasonable correspondence between the cobalt block grades and the adjacent drilling sample grades. An example section is shown below in Figure 17.

Figure 17 Cross Section 793,620E Showing Resource Blocks and Drill Hole Sample Cobalt Grade

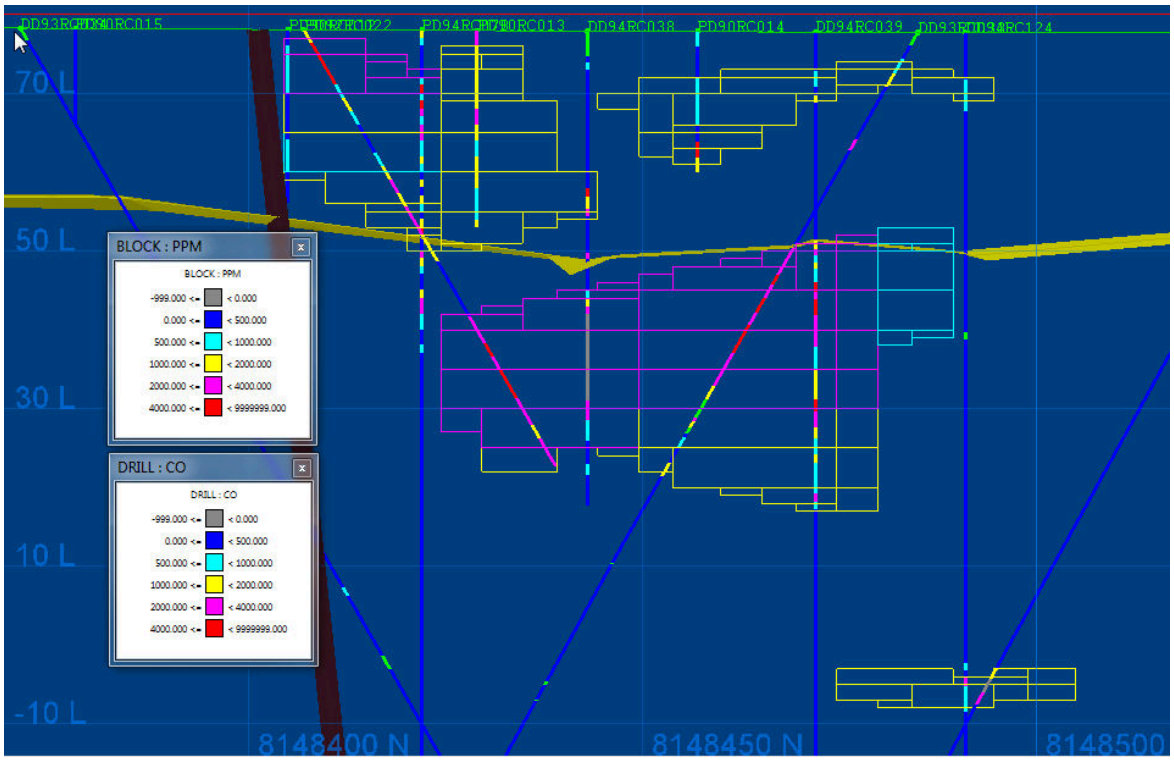
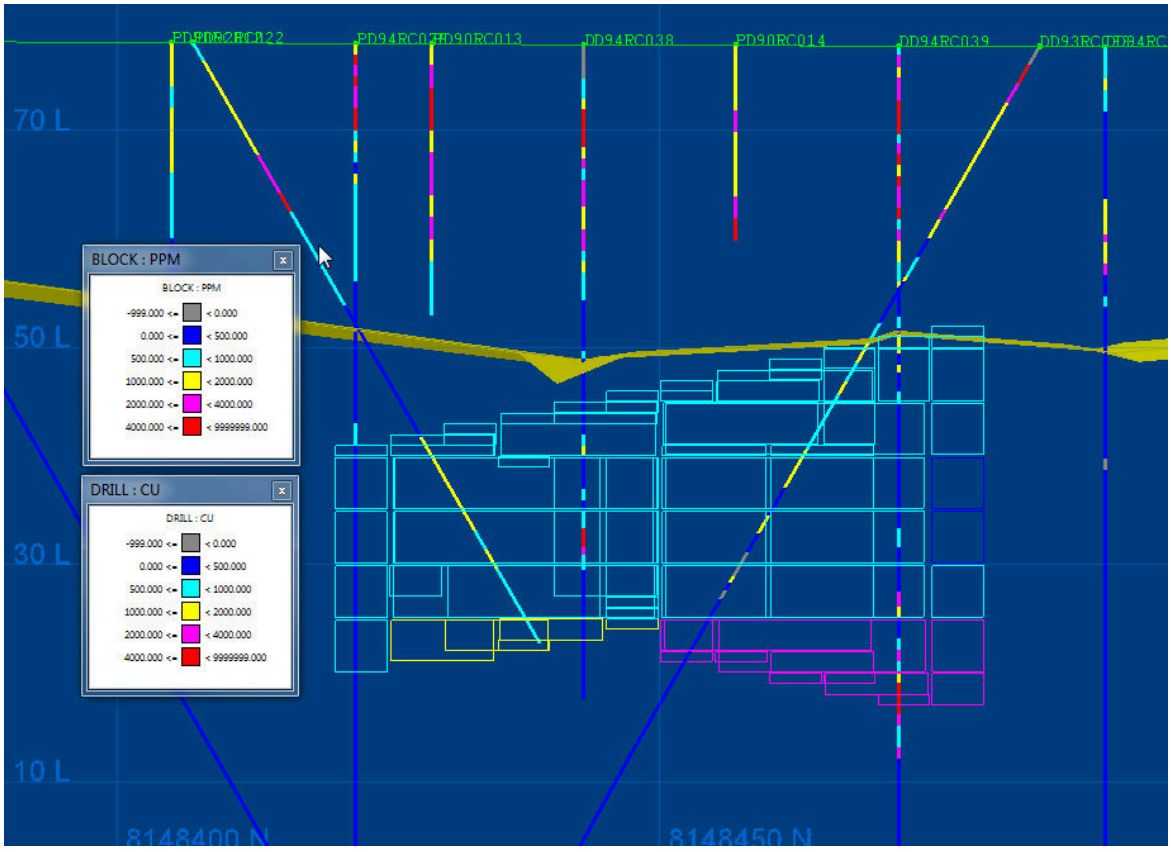


Figure 18 Cross Section 793,620E Showing Domain 14 Resource Blocks and Drill Hole Sample Copper Grade



For the copper estimate, the very high copper grades in hole DD94RC039 have resulted in localised high block estimates, but overall the block grades are lower and representative of the local drill sample grades. The kriging estimate has been effective in estimating the global grade whilst the mean composite grade overestimates the copper grade of this domain. The section in Figure 18 above shows the location of the high grade copper samples in DD94RC039. It also shows the elevated copper grade in the oxide zone forming a supergene enrichment zone. When more drill data is available, Ravensgate recommend that copper is domained and estimated independently from cobalt and nickel as they have different spatial distribution and mineralisation style.

2.8.8 Resource Classification

The Stanton Deposit Mineral Resource estimate has been classified as Inferred Resource and reported in accordance with the JORC Code (2012). Resource classification for the Stanton Deposit is reported to be based on a number of criteria including the geological confidence, data integrity, spatial grade continuity and estimation quality.

Geological confidence is good. There is some surface outcrop and good quality geological logging of diamond core in the deposit area. The stratigraphic sequence is well established and there has been much work conducted on the mineralogy and ore genesis of the deposit.

Data quality is reasonable. There is no information on QAQC of sampling and assay on which to assess the quality of the data. It was collected and recorded by a company with a good reputation for high quality work. Samples with poor core recovery were excluded from the resource estimate. Ravensgate believe the drill data is of sufficient quality to support an Inferred Mineral Resource estimate.

There is some close spaced drilling on one section line. On other drill lines the holes are wider spaced at around the modelled range of the variogram. With this spacing the block grade estimate may not be locally accurate but is sufficient to support an Inferred classification.

An order of magnitude economic study and pit optimisation was conducted to test the viability of the deposit (refer to section 2.9 of this report). The thin low grade lower zone mineralisation is not expected to be economic to extract and was excluded from the Mineral Resource estimate and added to the Exploration Target.

2.8.9 Resource Tables

Resource blocks were selected for the Stanton Deposit at a cut-off of 500ppm Co. The resource is tabulated by weathering type and appropriately rounded to reporting precision in Table 11 below.

Table 11 Stanton Inferred Mineral Resource at 500ppm Co Cut-off

Weathering	Volume (BCM)	Tonnage (Tonnes)	Co (ppm)	Ni (ppm)	Cu (ppm)
Sulphide	70,000	180,000	2,000	1,200	900
Oxide	140,000	320,000	1,600	700	1,300
TOTAL	210,000	500,000	1,700	900	1,100

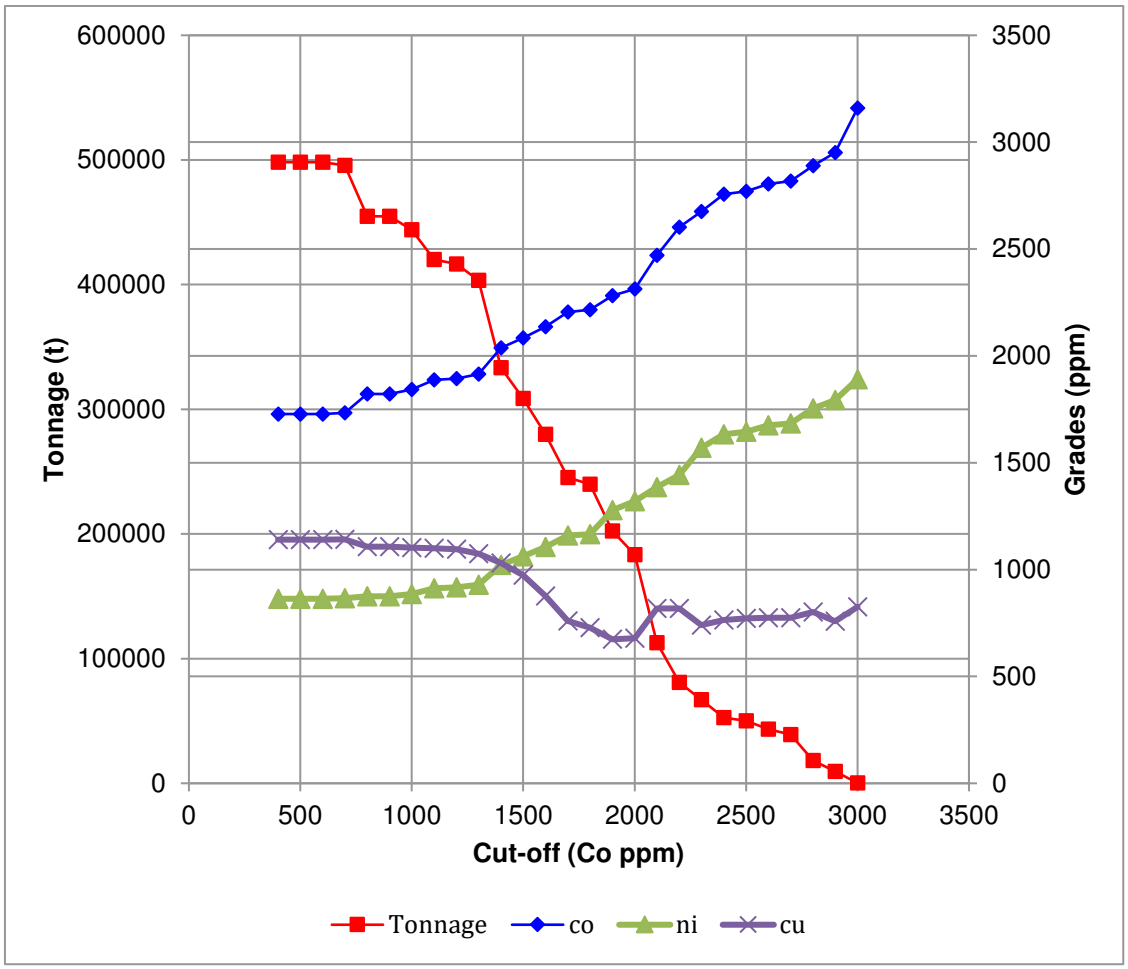
2.8.10 Extrapolated Resource

Resource blocks are interpreted to a maximum distance of 80m from the nearest drill hole. Blocks that are more than 25m from the nearest drill hole were considered to be extrapolated, as this is greater than half the regular 40m x 40m drill spacing. The percentage of Inferred Resource that is based on extrapolation is estimated to be 35% of the resource.

2.8.10.1 Grade Tonnage Curve

The grade tonnage relationship is displayed in Figure 19 below. Cobalt and nickel grades show a similar distribution as expected. The copper grade drops at higher cobalt cut-off grades. Higher copper grades are located closer to the surface where the cobalt grade is lower, excluding the near surface material at higher cobalt cut-offs results in the selection of the deeper material with lower copper grade.

Figure 19 Stanton Deposit Grade Tonnage Curve



2.8.10.2 Comparison to Previous Resource

Drill hole data and the geological interpretation has not changed between the two estimates. The large difference in the estimates is due to the change in the modelling and grade estimation method and the exclusion of the lower zone from the 2017 estimate. In 2001 a 2D sectional polygonal estimation was used. In 2017, 3D wireframe model and an ordinary kriging grade estimation was used. It is difficult to directly compare the two estimations in section as the sectional interpretation projects drill holes that are off section to the section whilst the wireframe model honours the 3D location of the drill hole. Only one of the sections from the previous sectional interpretation was available to Ravensgate.

Figure 20 shows the wireframe and estimated blocks overlaid on the sectional resource interpretation. The 2017 resource block model does not include any lower zone. The wireframe interpretation does not include as much internal dilution of drill holes with grade less than 500ppm Co. This and the unspecified section projection distance could explain the large difference in the grade and tonnage of the estimates which is seen in Table 12 below.

Figure 20 2017 Resource Estimate Block Overlaid on 2001 Section EST_00/B

Table 12 Total Mineralised Inventory Change for 2001 and 2017 Resources Estimates

	Tonnage (Tonnes)	Co (ppm)	Ni (ppm)	Cu (ppm)
2001	860,497	1,481	793	1,464
2017	498,217	1,728	864	1,140
Change	-362,280	246	70	-324

2.9 Development Studies

2.9.1 Pit Optimisation

A pit optimisation was conducted by Ravensgate to evaluate the economics of the mining and processing the deposit. The study was based on a similar scenario to the 2001 scoping study. It was based on producing a bulk concentrate at the nearby Redbank plant or a new plant constructed at Stanton. Metallurgical recovery of 70% and metal process of A$60,000/t Co, A$12,000/t nickel and A$7,500 copper were used to test a number of different scenarios including the recovery of only cobalt. It assumes a bulk concentrate is produced at the nearby Redbank plant or a new plant constructed on site. Further treatment and extraction of metals by transport of the concentrate interstate.

Pit optimisation was conducted for six scenarios using Whittle 4X software. Inputs used in the cases are shown in Table 13 below.

Table 13 Pit Optimisation Input Parameters

		1	2	3	4	5	6
		Redbank Plant	New Plant		Redbank Plant	New Plant	
Mill throughput	**ktpa**	**100**	**100**	**500**	**100**	**100**	**500**
Commodity price Co Ni Cu	$/t	60,000 12,000 7,500			60,000 - -		
Processing Cost (Incl General and Admin.)	$/t	50	50	30	50	50	30
Ore haulage	$/t	6.00	-	-	6.00	-	-
Average Mining Cost	$/t	2.83	2.83	2.57	2.83	2.83	2.57
Processing recovery	%	70					
Concentrate transport cost	$/t conc.	200					
Value add processing	$/t conc.	150					
Payable metal Co Ni Cu	%	98% 90% 90%			98% - -		
Overall Pit Wall Slope Angle	degree	45					

For all the scenarios on optimum pit shell enclosing the upper zone of mineralisation was produced. Results of the optimisation scenarios are summarised in Table 14 below.

Table 14 Pit Optimisation Results

				Tonnes	Co	Ni	Cu		Undisc.	Discounted @ 8%			(Incl Ni&Cu credits)
										Best	Worst	Avg.	
	[Mt]	[Mt]	[w:o]	[Mt]	[%]	[%]	[%]	[kt]	[M$]				[$/t]
1	1.3	1.0	2.4	0.4	0.19	0.09	0.11	5.2	8.0	7.3	7.1	7.2	44,456
2	1.3	0.9	2.3	0.4	0.19	0.09	0.11	5.4	10.3	9.5	9.3	9.4	40,214
3	1.5	1.0	2.1	0.5	0.17	0.09	0.11	6.5	19.8	17.8	17.5	17.6	25,871
4	1.1	0.8	3.1	0.3	0.21	0.11	0.10	3.6	4.1	3.8	3.8	3.8	49,736
5	1.1	0.8	2.6	0.3	0.20	0.10	0.10	4.1	5.8	5.3	5.3	5.3	46,587
6	1.4	1.0	2.2	0.4	0.18	0.09	0.11	5.9	14.2	12.8	12.6	12.7	34,342

Even with a 50% increase in the metal price, the pit shell would not reach the lower mineralisation. This mineralisation is too low grade and the incremental strip ratio is too high to mine via an open pit. It is not expected that it would be economic to mine the lower zone and it was excluded from the Mineral Resource estimate. Capital costs of construction of a new plant are unlikely to be recovered from the mining of Stanton alone and the economics for the project relies on the

availability of the Redbank plant, or adding other cobalt-nickel deposits in the near vicinity to the resource base of the project.

2.9.1.1 Metallurgical Studies

Metallurgical test work was carried out by CRA in 1994 and later, on the same samples, in 1997 by Amalg Resources NL (Amalg) and were both carried out using flotation testing. A report (Wilson, 1994) prepared by specialist CRA divisions Advanced Technical Development (ATD), for Resource and Processing Developments (RPD) was carried out in 1994 to assess the options for producing a marketable cobalt product for the Stanton project.

ATD assayed half core samples 1 - 1.5m intersections of two diamond drill holes cores, DD94RC38 and 39 to determine the mineralised zones. The mineralised zones were subsequently combined into two composites, with two high grade sections excluded from the composites and retained for mineralogical examination only (Table 15). Mineralogical examination and flotation tests were carried out on the composites.

Ground samples of the composites were submitted for mineralogical analysis for determination of mineral abundance and locking characteristics. The two high grade intervals in drill hole DD94RC38 were examined mineralogically to establish the reason for the localised cobalt enrichment. The composites were defined as Claystone and Vesicular, as this reflected their lithology. The Claystone composite spans both cores while the Vesicular composite represents the lower portion of hole DD94RC39. The mineralisation is still significant in the lowest portion of this hole at 52.6m, therefore it is likely that the vesicular mineralisation extends below this depth.

Table 15 Stanton Composite and High Grade Assays

		Assays (%)						
Composite	Intersections	Co	Ni	Cu	Fe	As	S	SiO2
		0.26	0.15	0.04	3.13	<0.01	0.60	63.6
Vesicular	DD94RC39: 46.26* – 50.27m	0.32	0.21	0.03	2.70	0.04	1.02	64
High Grade Sections	DD94RC38: 44.55 – 46.3m^	9.41	0.59	0.91	6.40	0.37	0.01	33.3
	DD94RC38: 46.3 – 47m	1.59	0.19	0.32	5.84	0.09	<0.01	49.6

NB: Intersections marked '' were incorrect in Table One of the original report and have been cross checked and corrected here after being checked against the assay data in Appendix 1 of the CRA (Wilson, 1994) report*

^Interval has 1.5m of core loss

ATD determined that the assays show that copper is low in all except the high grade intersections. The cobalt:nickel ratio is very similar in the claystone and vesicular composites while the high grade sections are relatively nickel deficient. The assays also show that the mineralogy confirms that there are two distinct styles of cobalt mineralisation. The claystone and vesicular composites contain cobalt and nickel in siegenite ($[Co,Ni]_3S_4$) that has varying degrees of iron substitution for cobalt and nickel in the lattice. Within the high grade sections in DD94RC38, the cobalt is present as cobalt oxide, which carries some copper. The cobalt:nickel ratio and the sulphur and copper assays could be used to define these styles of mineralisation.

2.9.1.2 Sulphide Mineralisation – Siegenite

The spectrum of elemental composition of siegenite that was observed ranged from linnaeite (Co_3S_4) to a very high iron siegenite, which only contains trace amounts of cobalt. A greater amount of this high iron siegenite was observed in the vesicular composite. The average composition of the siegenite has not been determined, although this could be done by probing a suitable number of siegenite grains under scanning electron microscopy (SEM). As an approximation, the siegenite composition was estimated by ATD from the SEM determined mineral abundances and elemental assays. These calculations imply that the siegenite contains ~20% Co, ~15% Ni and ~20% Fe.

The ground samples were examined for locking information. The main gangue minerals are silicates with small amounts of pyrite. It was found that between 60 – 77% of the siegenite was observed to be free at the -106 µm and -53+38µm sizes. The definition of free, as used by ATD, is that 90% or more of the grain is siegenite as seen in the polished section. The majority of the locked siegenite is within silicates. The copper occurrence was generally as trace amounts of chalcocite that was closely associated with siegenite. One occurrence of copper was found in the siegenite lattice.

2.9.1.3 Cobalt Oxide Mineralogy

The ATD findings reported for cobalt oxide are somewhat unclear. Wilson (1994) states in his report, "Although this mineralisation was only found in 2.45m of DD94RC38 the contained cobalt is significant. The 1.75m intersection assaying 9.41% Co had 1.5m core loss, but if the assay is representative of the whole 1.75m it carries the same cobalt as 55m assaying 0.3% Co. This mineralisation was not found in DD94RC39, so its extent across the prospect is not known."

Therefore, with 1.5m core loss, it can be assumed that only 0.25m of the intersection was assayed, returning the high grade cobalt values. To then assume that ~14% of the intersection 'could' be representative of the whole intersection is dangerous and misleading. Ravensgate suggests that further test work is carried out in this area. The assay for the lower intersection of 0.7m returned 1.59% Co.

ATD analysed the cobalt oxide in the two high grade sections by X-ray analysis under the SEM, which gave the following composition (Atom %):

DD94RC38 44.55 – 46.3m: 35% Co, 4% Cu, <2% Ni, containing trace Si

DD94RC38 46.3 – 47m: 25% Co, 4% Cu, <1% Ni, containing 5% Si

ATD report the cobalt oxides as secondary in nature and most likely due to the dissolution of sulphides and precipitation as cobalt oxide. The precipitation has occurred around clay particles which appear to have seeded the crystallisation. The precipitation, once seeded, grew radially outwards.

It is likely however, that the 1.75m interval in DD94RC38 which contains the cobalt oxides is part of a fault zone through the claystone. This would explain the substantial core loss and the presence of the cobalt oxides in an interval that has siegenite above (34 – 44.55m) and below (47 – 49.4m) it. If this was a weathering effect, siegenite wouldn't be expected above the oxides. It must be noted that these high grade cobalt samples containing cobalt oxide did not form part of the flotation test work.

2.9.1.4 Flotation Tests

Four sighter flotation tests were carried out, with three on the claystone composite, comprising two roughing tests and one cleaning test. The cleaning test scheme was repeated on the vesicular composite. The recovery in the roughing stages confirmed the predictions from mineralogy with ~70% cobalt recovery achieved. ATD proposed that it was possible that some of the cobalt in the tailings is cobalt oxide that did not respond to the flotation scheme. This would be a small amount as no cobalt oxide was seen mineralogically in the feed samples. Finer grinding of the feed or a rougher tail regrind followed by a scavenger flotation stage, may increase recovery through greater liberation.

The slimes entrained into the concentrate in the roughing stage were able to be effectively cleaned out of the concentrate in the cleaning stages. The concentrate grades from the cleaning tests on the two composites were as follows:

Claystone:	17.2% Co,	9.5% Ni,	13.7% Fe,	3.2% Cu,	10.3% SiO_2
Vesicular:	13.2% Co,	8.2% Ni,	17.6% Fe,	1.6% Cu,	10.2% SiO_2

The iron in the concentrate can largely be attributed to the iron in the lattice, however no pyrite depression was used in the flotation scheme, so it is likely that a small amount of the iron in the concentrate is due to pyrite.

Substantial cobalt recovery was lost in the cleaning stages for both composites. ATD reported that the reason for this was undetermined, although point to the fact that the flotation scheme was not optimised and suggest that alterations to the scheme would be able to reduce the losses in the

cleaning stage given that the mineralogy indicates ~70% of the siegenite is free in the feed. Mineralogy on the cleaner tails could also better define the reasons for the losses.

Measurable arsenic levels were found in the vesicular composite. Arsenic assays were carried out on the flotation rest of this composite. The arsenic upgraded to 0.66% in the concentrate. Rutile was observed in the mineralogical examinations of the feed therefore titanium assays were carried out on the flotation products of the first three tests to see where it reported – as expected the rutile reported in the tails.

The low copper head grade and the high locking between chalcocite and siegenite made the option of producing separate copper and cobalt-nickel concentrates futile. ATD did however suggest that an alternative oxide flotation scheme may be able to recover the cobalt oxide to a flotation concentrate. As seen in the account of the cobalt oxide above, this is speculation as no test work was carried out on the cobalt oxide material. Given that these two cobalt oxide containing sample intervals returned by far the highest cobalt assays, more attention should be directed towards the role cobalt oxides play at Stanton.

Based on these findings, ATD suggested that the processes at Sherritt International's nickel and cobalt refinery in Canada and the OM Group's chemical production facility in Kokkola, Finland, appear to be suited to treating a Stanton cobalt-nickel concentrate. The iron content which is the major impurity of the Stanton concentrate may however be of concern to these facilities. The Sherritt process is the usual process by which nickel sulphide concentrates can be treated through either smelting or pressure leaching. Metal recovery from copper-cobalt oxides usually involves separation by froth flotation then smelting to produce a copper-cobalt liquid which is further refined by hydrometallurgical or electrolytic processing to separate the copper from cobalt. Lateritic mineralisation can be either treated by hydrometallurgical or pyrometallurgical processes. Various leaching processes may also be an option for the oxide mineralisation (Randell, 2012).

In 1997, the same two ore samples, designated as claystone and vesicular composites, were received at Optimet Laboratories Pty Ltd (Optimet), from CRA/ATD in Melbourne for investigation as -3mm crushed material of 10 x 1kg and 1 x 1kg charges, respectively (Wong, 1997).

The head assays obtained from the two ore samples were:

Table 16 Head Assays Obtained by Optimet for the CRA Stanton Ore Composite Samples

Composite	Co %	Ni %	Fe %	Mg %	Total S %
Claystone	0.246	0.163	2.5	1.15	0.65
Vesicular	0.293*	0.221*	-	-	0.97*

**Calculated head assays obtained in the single flotation test conducted on vesicular composite*

Laboratory batch flotation tests using a Denver D-12 flotation machine were carried out on the two ore samples with the objective of establishing the response, performance and type of concentrates which could be potentially produced. Eight tests were carried out on the claystone composite with one test on the vesicular composite as seen below in Table 17.

Table 17 Flotation Tests Conducted by Optimet

Test Number	Description
Test 1	Stage rougher at primary grind 80% -53µm using Sodium isobutyl xanthate as collector at natural pH
Test 2	As per Test 1 but with Controlled Potential Sulphidisation (CPS) in the latter rougher stages
Test 3	As per Test 1 with CPS in all rougher stages
Test 4	As per Test 3 with additional sodium silicate as gangue depressant
Test 5	As per Test 4 for rougher followed by stage cleaner incorporating CPS

Test 6	As per Test 1 for rougher followed by cleaner / recleaner with addition of sodium silicate in all stages
Test 7	As per Test 6 at a finer primary grind of 90% -38µm instead of 80% -53µm
Test 8	As per Test 7 with regrind of total rougher concentrate to 100% -20 µm prior to cleaner / recleaner
Test 9	As per Test 7 but conducted on the Vesicular Composite instead of the Claystone Composite

Tests 1, 2 and 3 showed that the claystone composite gave a reasonably good response to bulk sulphide rougher flotation at 80% -53µm primary grind, although the cobalt rougher grades are generally very low mainly because of sulphide contaminants. Cobalt rougher recoveries are up to ~83-84% and the use of CPS gives improvement in cobalt rougher recovery up to about 88%. Optimet were uncertain whether the overall recovery was affected by the presence of a combination of oxidised sulphides and fine sulphides free and / or locked with non-sulphides.

Tests 4, 5 and 6 showed that cleaner / recleaner flotation are effective in up-grading the Corougher concentrate produced by bulk sulphide flotation conditions particularly coupled with the addition of sodium silicate as gangue depressant.

Tests 7 and 8 showed that the finer primary grind of 90% -38µm gave significant improvement in cobalt flotation performance and there is no apparent benefit in employing a regrind procedure. Test 7 gave the best result of producing cobalt final concentrates of 16.6% Co or 15% Co at 72% respectively for the claystone composite.

Test 9 showed that the vesicular composite gave similar flotation response and performance as the Claystone under the conditions established for the claystone composite. Higher overall cobalt recovery is obtained for the vesicular composite potentially due to the higher head grade, while conversely lower concentrate grade is obtained because more sulphide gangues are present in the vesicular composite. Selective flotation conditions may be required for processing the vesicular composite in order to produce a higher grade concentrate. Cobalt final concentrates of ~10% Co at 88% recovery are produced in the single test for the vesicular composite.

In all cases, the nickel flotation response and performance were very similar to that of the cobalt, but generally with a lower grade / recovery relationship highlighting the close mineralogical association between the two.

2.9.1.5 Other Processing Options

ATD suggested that a gravity separation process may be an option for Stanton mineralisation (Wilson, 1994). The specific gravity (SG) of siegenite is reported as 4.5 – 4.8, with the major gangue in the system being silicates – which would likely have and SG of 3 or less. The rutile (SG 4.2 – 4.3) in the system, along with pyrite (SG 5.0) and iron oxide (SG 4.7 – 5.2) would all be likely to report to a gravity concentrate as well as the siegenite.

The SG of the cobalt oxide at Stanton is unknown, however Heterogenite, CoO(OH), has an SG of 4.2 – 4.5 reported in the literature. If the cobalt oxide at Stanton has a higher SG that the silicate gangue, this would make gravity processing an option.

Gravity processing was also suggested in a scoping study report (Resource Engineers Pty Ltd, 2001) – refer to section 2.9.2.

2.9.1.6 Further Work

The bulk of the mineralisation occurs within the upper 60m of the deposit although thinner zones occur to 90m below surface (Goulevitch, 2002). The base of oxidation (i.e. first appearance of sulphide mineralisation) has been mapped at between 20m and 40m, therefore this suggests that much of the mineralisation (~60%) occurs with the oxide and transition zones. Further test work should be carried out on these oxide zones. Randell (2012) noted that the surface laterite, which is

up to 1.8m thick, can be expected to have scavenged some of the cobalt and nickel. Whether this is recoverable or not should also be investigated.

The CRAE (Wilson, 1994) report concludes that "the flotation scheme is made uncomplicated by the absence of a major sulphide gangue phase but locking of 25-30% of the siegenite in silicate gangue in both of the composites restricts recovery". Ravensgate concurs with Randell's (2012) comments that although a concentrate (17.2% Co, 9.5% Ni, 3.2% Cu and 13.7% Fe, for the claystone; and 13.0% Co, 8.2% Ni, 1.6% Cu and 17.9% Fe, for the vesicular) was produced from this test work, it would seem that recovery is an issue that needs further resolution - especially with regard to the cleaning stage loss, to determine a reliable process route. Concentrate recoveries were calculated at 64% Co, 71% Ni, 76% Cu.

Future metallurgical test work needs to be carefully considered as it is apparent that mineralogical domaining of the deposit is not simply a case of oxide / primary sedimentary / volcanics - which is how the previous work was domained.

2.9.2 Scoping Studies

In 1998 Chemmet engaged a consultant to visit Canada and Europe to evaluate the future prospects for cobalt and the Stanton Project. At this time Chemmet also had discussions with major cobalt producers in the industry. Financial analysis of the project with the sensitive analysis of cobalt prices was also carried out (Goulevich, 2002).

Conclusions reached after evaluating other mining resources of cobalt worldwide were that:

- The future of cobalt was very poor, with the consultant predicting that the cobalt price would drop from US$21/lb to $7/lb and will remain at that level for five years.
- The cobalt price at that time (1998) required at least a minimum of 10Mt of proven deposit at a cobalt level of 0.1%, to warrant any mining activities. The estimate for Stanton at that time was only ~1Mt.
- More exploratory work was required at Stanton to expand the deposit beyond 1Mt up to 10Mt.

In 1999, Chemmet continued its economic evaluation of development options and produced an Information Memorandum with a view to engaging one or more partners to progress development of the Stanton deposit.

Following the sale in 2000 of Chemmet's interests in EL8413 to Mineral Estates Pty Ltd (MEPL), the following year MEPL completed an independent assessment of the identified Mineral Resources at the Stanton prospect with Explormin Pty Ltd (Goulevich, 2001) and a scoping study incorporating mining and processing options carried out by independent consulting engineers (Resource Engineers Pty Ltd, 2001).

This report, as well as examining the feasibility of mining the identified resources and producing a saleable concentrate, investigated the possibility of utilising the existing mining and mineral processing facilities at Redbank in preference to on-site processing at Stanton. The report also considered the potential for MEPL's parent company, HydroMet, to refine the concentrate to produce high value cobalt chemicals, as refining was part of HydroMet's core business. Refining by HydroMet was also seen as a means of removing potential commercial pressures that could be applied by smelters and avoiding contract price negotiations which could be influenced by competing suppliers of concentrate to the smelter.

Conclusions drawn by Resource Engineers Pty Ltd suggested that if the Mineral Resource estimate could be upgraded to a Measured Resource, there could be a viable mining development with an attractive return. The report recommended that HydroMet proceed to develop the project through the following steps:

- Inspect the Amalg Resources (Redbank) plant, mine site and associated infrastructure
- Conduct infill drilling to upgrade the resource estimate
- Investigate Native Title issues and commence negotiations if appropriate
- Commence scoping discussions with mining contractors to identify suitable companies
- Plan metallurgical test work to be conducted on fresh samples from infill drilling
- Plan test work to develop a refining process at HydroMet.

Ravensgate is unaware, nor has been made aware, of any other scoping studies that have been carried out over the current Wollogorang Project area.

2.9.3 Environmental Studies

An environmental survey was carried out over the Stanton / Running Creek area by CRA in 1995, in their final year of exploring the project, which was focussed on soil and vegetation; and surface and ground water (Harder, 2000).

Coolabah Group Pty Ltd (March, 2017) have recently engaged environmental consultants Erias Group Pty Ltd (Erias) to prepare a Flora, Fauna and Invasive Species Report on the Wollogorang Project. The report focussed on the Stanton / Running Creek area covering desktop information with no fieldwork carried out.

The primary pieces of legislation relating to flora, fauna and invasive species in the Northern Territory that are relevant to the project are:

- Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)
- Territory Parks and Wildlife Conservation Act 2014 (TPWC Act)
- Weeds Management Act 2013 (Weeds Act)

An EPBC Act protected matters search was undertaken on 30 March 2017 and encompassed a 1km buffer around the approximate study area. The search found that in the specified area there is potential for:

- Fourteen threatened species.
- Nineteen invasive plant and feral animal species.
- Thirteen migratory fauna species.

Erias advised that management measures such as environmental inductions and training of staff are recommended to mitigate negative impacts on threatened species and to reduce the introduction or spread of invasive species, through a comprehensive set of standard operating procedures, prior to, during and post exploration activities have been carried out.

2.10 Exploration Target Range Evaluation

2.10.1 Historic Target Assessment

An historic exploration target was outlined by Geos Mining Mineral Consultants (Randall, 2012) for Auminco Coal Pty Ltd during an IGR and assessment of the Stanton Project in 2012. The tonnage and grade was derived from the Stanton Deposit tonnage and consideration of the geochemical anomaly size and exploration drilling but no details of how this was determined were supplied. These were further nominally reduced by 25% to provide a lower target tonnage value.

The exploration target was estimated between 5.1 - 6.8Mt @ 0.11 - 0.14% Co, 0.11 – 0.13% Cu and 0.04 – 0.07% Ni, for a cobalt equivalent grade of 0.17% CoEq, which took into account several prospects in proximity to Stanton which had been drilled and had returned encouraging results.

Ravensgate do not consider that this exploration target is compliant with the JORC Code due to the lack of documentation. In addition, the updated Stanton resource is smaller than the tonnage used to determine the exploration target. For these reasons, the Stanton Project Exploration Target was updated by Ravensgate for use in this IGR.

2.10.2 Exploration Target Range

Ravensgate has conducted an estimate of the exploration target of ten prospects in the Stanton Project which have been identified by soil lag geochemical anomalies and drilling. Locations of the exploration target prospects are shown in Figure 12 in a previous section of this report.

In determining the exploration target Ravensgate assumed that the mineralisation is of a similar style and geological control to the Stanton Deposit. Drilling on the other prospects has intersected the same flat lying stratigraphy encountered at the Stanton Deposit and it is reasonable to assume a similar model for mineralisation for the other deposits. The geochemical signature and drill samples from the Running Creek, Stanton 2 and Stanton 3 prospects appear to be different from the Stanton deposit and are primarily copper mineralisation.

Leapfrog geological modelling software was used to model a possible range of mineralised volumes based on the lag and drill samples assay values. Cobalt equivalent (Coeq) values were calculated for each sample to account for the nickel and copper content for use in the modelling of the exploration target. The following formula was used to calculate the cobalt equivalent and is based only on metal price. There was not sufficient metallurgical test work to include a consideration of relative metal recovery and the recovery for each metal was assumed to be the same. Metal prices are the same as those used in the economic assessment of the Stanton Deposit Mineral Resource (Reid 2017).

Coeq = Co + 0.125 x Cu + 0.2x Ni
Based on metal prices
Co = US60,000/t
Cu= uUS$7,500/t
Ni = US$12,000/t

Mineralisation at the Stanton Deposit was interpreted to be strongly controlled by the tabular sediment horizons interbedded with the trachyte volcanics. To emulate this flat tabular geometry, a linear estimator with a base range of 400m and a flat structural anisotropy of 10:10:1 was used to interpolate the lag and sample grades. Isosurfaces were generated at a range of grade thresholds to determine a reasonable mineralised volume for each prospect. The low tonnage case typically used only the drilling samples to reflect the possibility that that there was no mineralisation below the surface geochemical expression. The upper tonnage case typically used both lag and drilling samples to express the upside potential which had not been tested by drilling.

For each prospect the low case grade is based on the average grade (rounded down to single significant figure) of the drilling samples within the isosurface. The upper case grades used the average drilling sample grades rounded up to the next single significant figure. This assumes that the current drilling is a reasonably representative of the mineralisation. Details of the drilling and geochemistry for each prospect are given in Table 18 below.

For the cobalt rich prospects upper case, the grade of the Stanton deposit was applied to allow for the possibility that additional drilling will intersect mineralisation similar to the Stanton Deposit.

Included in the exploration target is the lower zone of mineralisation from the Stanton Deposit. This zone was excluded from the resource on the potential for economic extraction. The modelled mineralisation tonnage and grade was factored by minus/plus 30% reflecting the typical uncertainty in an inferred resource to produce the low and high cases. See section 2.8 for details of modelling and grade estimation of the Stanton Deposit.

Table 18 Stanton Project Drilling and Geochemistry of Exploration Target Prospects

Prospect	Isosurface Threshold		Anomalous Geochemistry	Drilling	Comments
	Low	High			
Stanton North	200	100	Very little geochemical signature	Three holes, one with shallow low grade mineralisation	Stanton Deposit grades applies to high case
Stanton SW	NA	75	Strong Co, Ni anomalism over area 500 x 1000m	Four holes on the eastern side of the anomaly with no significant mineralisation	No tonnage allocated to low case, Stanton Deposit grades applies to high case
Stanton 2	500	300	Very strong Cu anomalism over area of 900m x 700m	19 drill holes many with strong near surface copper mineralisation	
Stanton 3	500	300		19 drill holes many with strong near surface copper mineralisation	
Archangel	200	150	No Cu or Co anomalism	Five holes in the area with one hole intersecting low grade cobalt mineralisation	
Felix	100	100	Strong Co-(Cu) anomalism over broad area (1200m x 400m)	25 drill holes some with low grade intersections	Stanton Deposit grades applies to high case
Gregjo	200	100	Discrete Co/ Ni (700m x 400m) and Cu (300m x 100m) anomaly	9 drill holes but only two holes with copper intersections	Stanton Deposit grades applies to high case
Saltlick	200	100	Extensive Co anomalism	10 drill holes mostly to the NE of the cobalt anomaly	Stanton Deposit grades applies to high case
Stout	NA	100	Co (900 x 200m) and smaller Cu anomaly	42 drill holes on a regular (200m x 200m) grid with only low grade copper in some holes	Stanton Deposit grades applies to high case

Prospect	Isosurface Threshold		Anomalous Geochemistry	Drilling	Comments
	Low	High			
Running Creek	500	300	Very strong Cu anomalism over area of 900m x 700m	46 broad spaced (200m x 200m) drilling with significant copper mineralisation in several holes	
Stanton Lower	NA	NA	NA	Of the 35 holes drilled into the Stanton deposit, 6 holes intercepted significant mineralisation in the lower sedimentary zone	Lower zone excluded from the mineral resource estimate was factored by +-30% to give the high and low case tonnage and grades

A range of 2Mt grading 300ppm cobalt, 80ppm nickel and 5,000ppm copper to 10Mt grading 1,200ppm cobalt, 600ppm nickel and 3,000ppm copper was determined for the ten prospects. Ravensgate note that the potential quantity and grade is highly conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource in any of the prospects. Details of the exploration target range for each prospect is shown in Table 19 below.

Table 19 Stanton Project Exploration Target Range of Each Prospect

Prospect	Low Case				High Case			
	Tonnage (Kt)	Cobalt (ppm)	Nickel (ppm)	Copper (ppm)	Tonnage (Kt)	Cobalt (ppm)	Nickel (ppm)	Copper (ppm)
Stanton North	40	500	100	800	300	1,700	900	1,100
Stanton SW					800	1,700	900	1,100
Stanton 2	780	400	90	5,000	1,500	500	100	5,300
Stanton 3	120	200	90	7,000	700	300	100	7,200
Archangel	90	400	40	1,400	300	500	50	1,500
Felix	40	100	50	300	2,000	1,700	900	1,100
Gregjo	200	50	20	3,200	700	1,700	900	1,100
Saltlick	100	20	30	6,600	1,300	1,700	900	1,100
Stout	0				1,200	1,700	900	1,100
Running Creek	430	100	40	7,000	1,100	200	50	7,200
TOTAL	2,000	3000	80	5,000	10,000	1,200	600	3,000

Figures in Blue are Stanton Deposit Grades

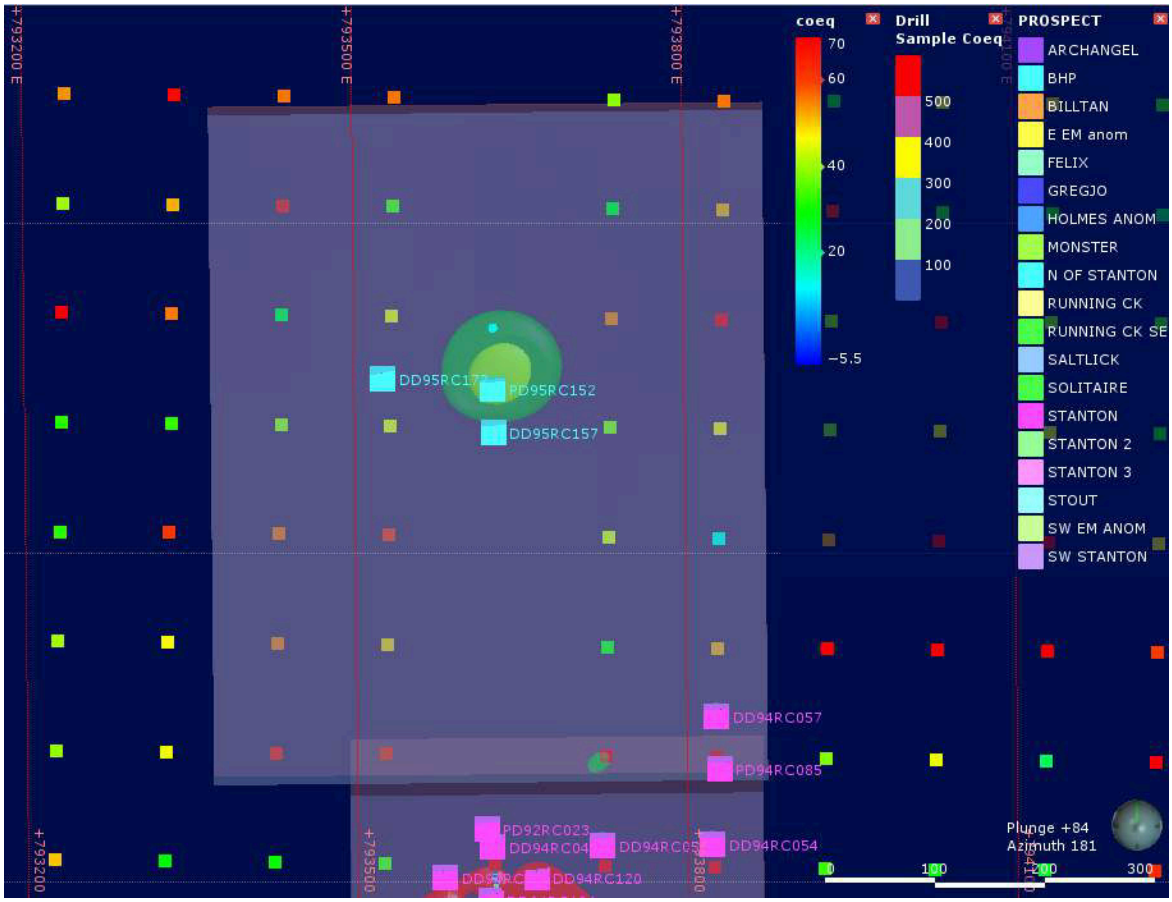
Details of the estimation for each of the prospects are described in the following sections.

2.10.2.1 Stanton North

Stanton North is located 400m to the north of the Stanton Deposit. Lag geochemistry in this area shows some nickel anomalism and there are three drill holes (DD95RC152, 157 and 172) which test the zone. The low case is based on one drill hole with the 200ppm threshold volume. The high case based on drilling and lag samples using a 100ppm threshold.

The plan view of the Stanton North deposit is shown below in Figure 21 below. The high (100ppm Coeq) and low case (200ppm Coeq) isosurfaces can be seen centred around drill hole PD95RC152.

Figure 21 Stanton North Exploration Target Plan View



Small squares = geochemical samples - coloured by cobalt equivalent grade
Large squares = drill holes - coloured by prospect

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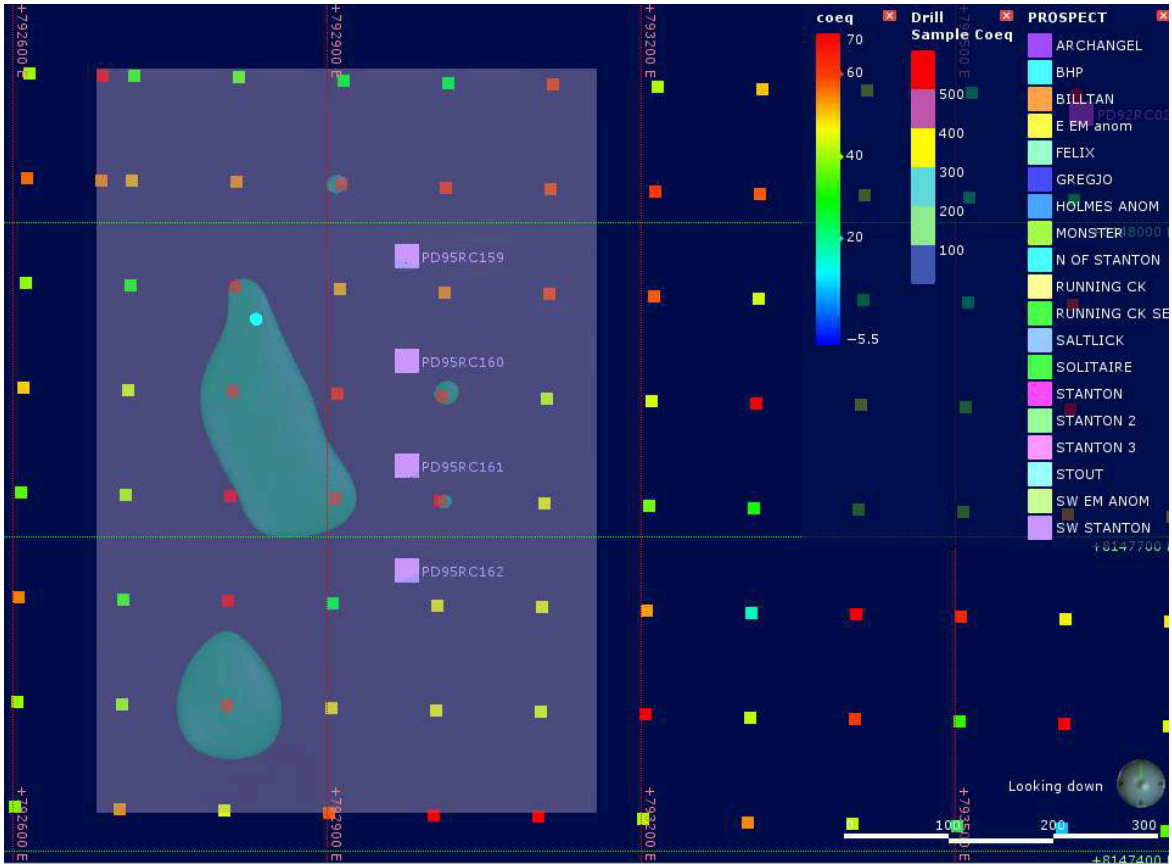
2.10.2.2 Stanton SW

Stanton SW is located about 1000m to the southwest of the Stanton Deposit. There is a strong lag geochemical anomaly 500m x 1000m in size. Four drill holes (PD95RC159-162) in a line at the eastern section of the anomaly failed to produce any significant intersections.

A low case volume of zero was applied to reflect the lack of mineralisation encountered in drilling. The upper volume was determined from a 75ppm Coeq isosurface of the drilling and lag samples can be seen in Figure 22 to the west of the line of drilling.

Figure 22 Stanton SW Prospect Exploration Target Plan View



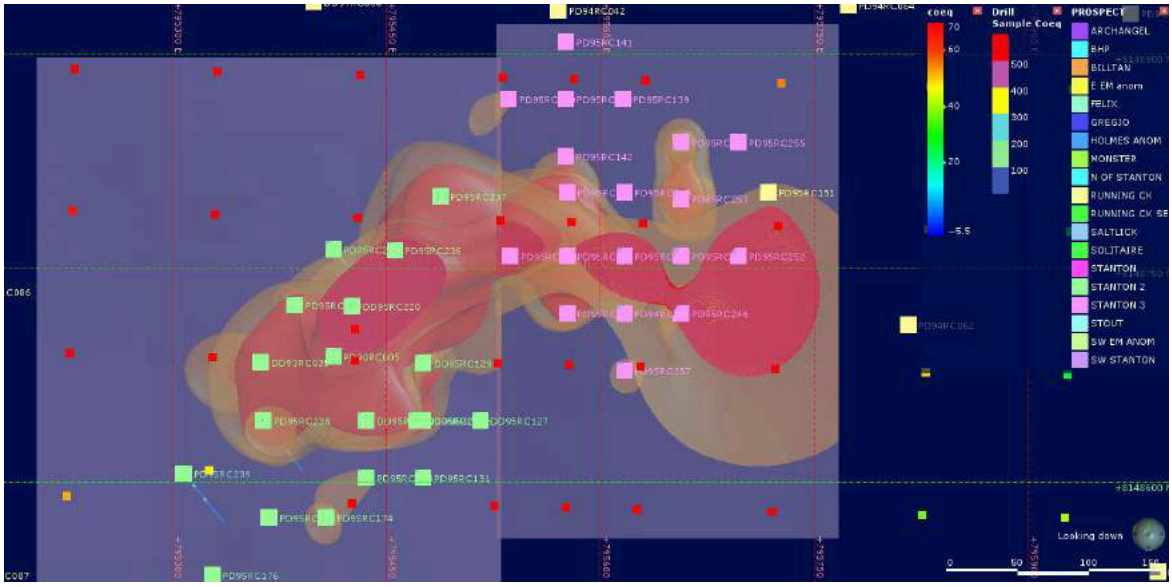
Small squares = geochemical samples – coloured by cobalt equivalent grade
Large squares = drill holes – coloured by prospect
Green = isosurface at 75ppm Coeq

2.10.2.3 Stanton 2 and Stanton 3

The Stanton 2 and 3 deposits are located approximately 200m to the east of Stanton deposit and to the south of Running Creek prospect. The area is defined by a copper lag anomaly 900m by 700m in size. Twenty drill holes at Stanton 2 and nineteen drill holes at Stanton 3 on a 50m x 50m grid, have encountered mostly near surface copper mineralisation. At depth there are some discontinuous cobalt intercepts in isolated drill holes.

The low cases were determined using a 500ppm Coeq isosurface using only drill samples. The upper cases were determined using a 300ppm Coeq isosurface on both drill and lag samples. The low case is shown in red in Figure 23 below and the high case in brown.

Figure 23 Stanton 2 and Stanton 3 Prospects Exploration Target Plan View



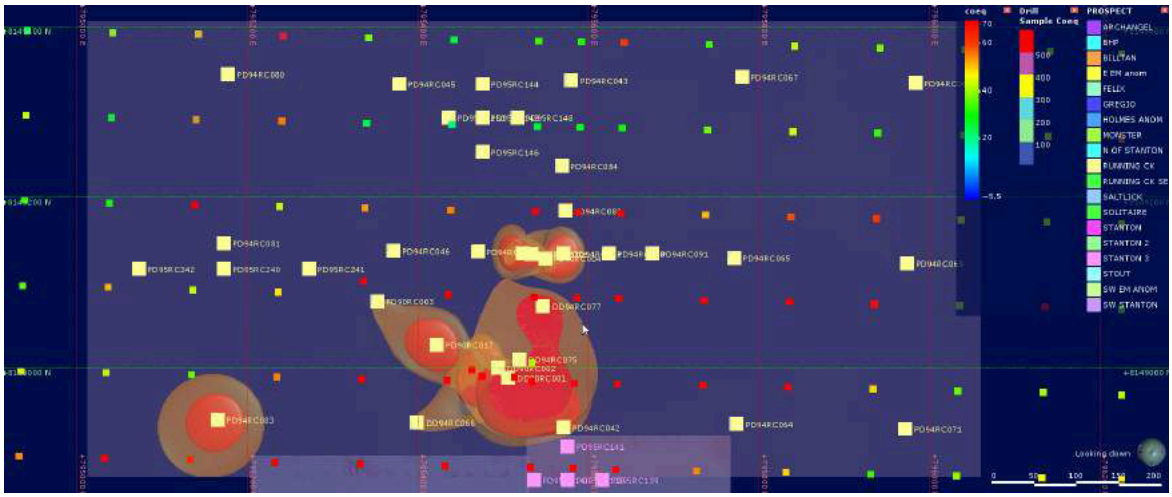
Small squares = geochemical samples – coloured by cobalt equivalent grade
Large squares = drill holes – coloured by prospect
Red = low case isosurface; brown = high case isosurface

2.10.2.4 Running Creek

Running Creek Prospect is located to the north of Stanton 2 and 3, defined by the same lag copper anomaly which continues north. It has been tested with wide spaced drilling. The lower case exploration target is based on drilling only using a 500ppm Coeq isosurface. The upper case is determined using both lag and drill samples and a 300ppm Coeq isosurface.

Significant near surface copper mineralisation was intersected in a number of holes. The location of the low and high case isosurfaces can be seen in Figure 24 below.

Figure 24 Running Creek Prospect Exploration Target Plan View



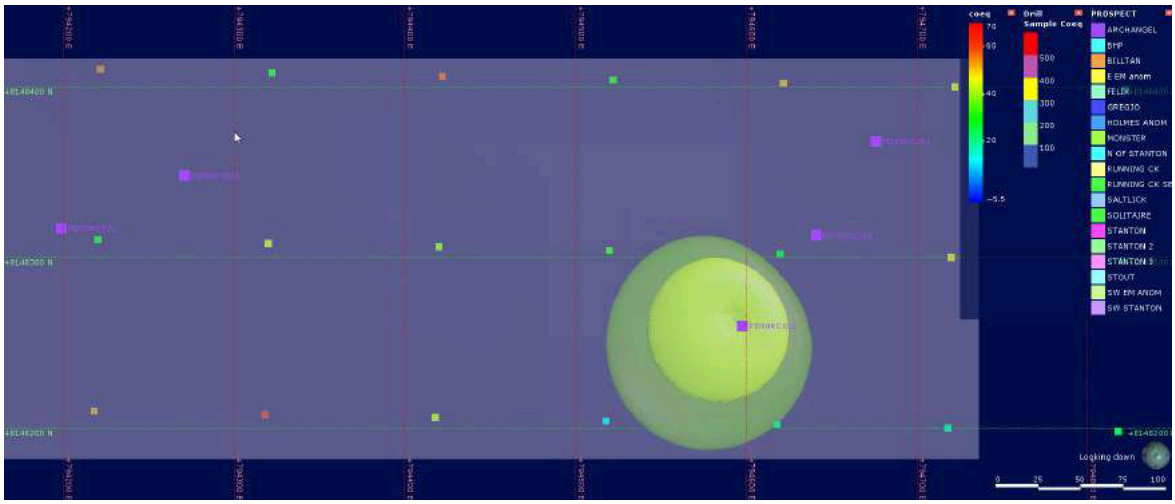
Small squares = geochemical samples – coloured by cobalt equivalent grade
Large squares = drill holes – coloured by prospect
Red = low case isosurface; brown = high case isosurface

2.10.2.5 *Archangel Prospect*

Archangel is located about 1000m to the east of the Stanton Deposit. There is very little lag geochemical expression in the area and the Exploration Target is based on five holes drilled in the locality.

Hole PD90RC011 intersected low grade cobalt mineralisation. The two cases can be seen in Figure 25 to be centred on this drill hole.

Figure 25 Archangel Prospect Exploration Target Plan View



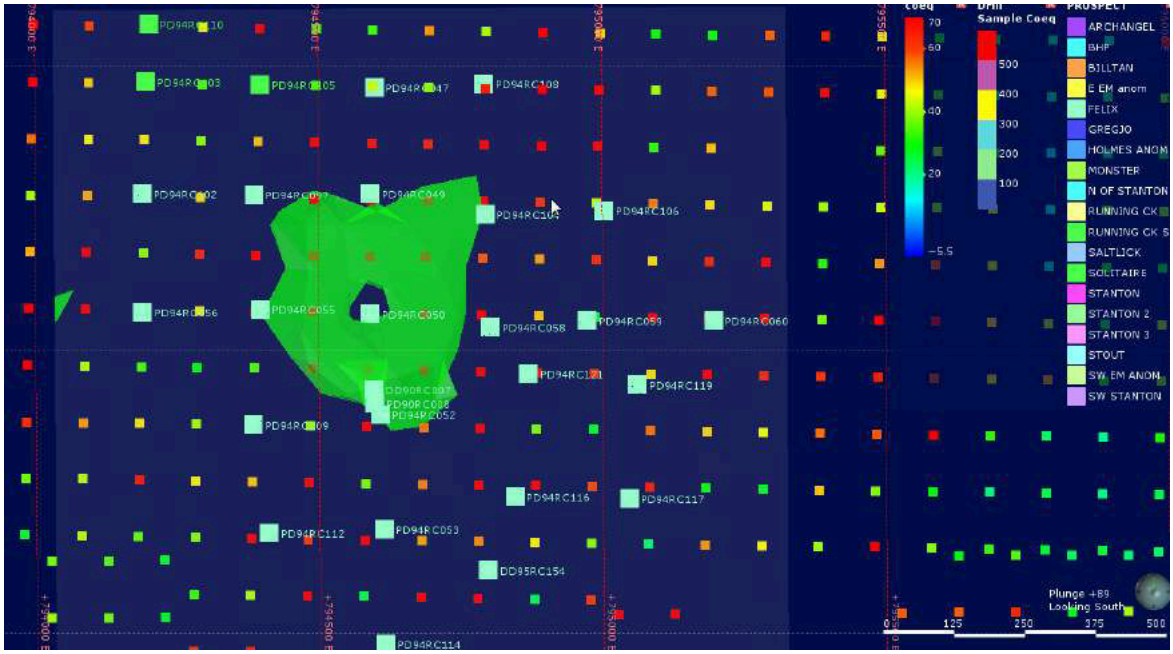
Small squares = geochemical samples - coloured by cobalt equivalent grade
Large squares = drill holes - coloured by prospect
Light green = low case isosurface; dark green = high case isosurface

2.10.2.6 *Felix Prospect*

The Felix prospect is located 1,500m to the south southeast of the Stanton Deposit and is defined by a large and coherent pattern of lag geochemical anomalies (1,200m x 400m) with strongly anomalous values for both copper and cobalt. A total of 22 RC drill holes were completed on broad 200m hole spacing, reasonable for copper intersections were encountered in some holes but cobalt results were disappointing.

The low case has been defined based on drilling only using a 100ppm Coeq isosurface and can be seen in Figure 26 as a small zone associated with low grade mineralisation in DD90RC007 and PD90RC008. The high case is defined using both drill and lag samples at a 100ppm Coeq isosurface.

Figure 26 Felix Prospect Exploration Target Plan View



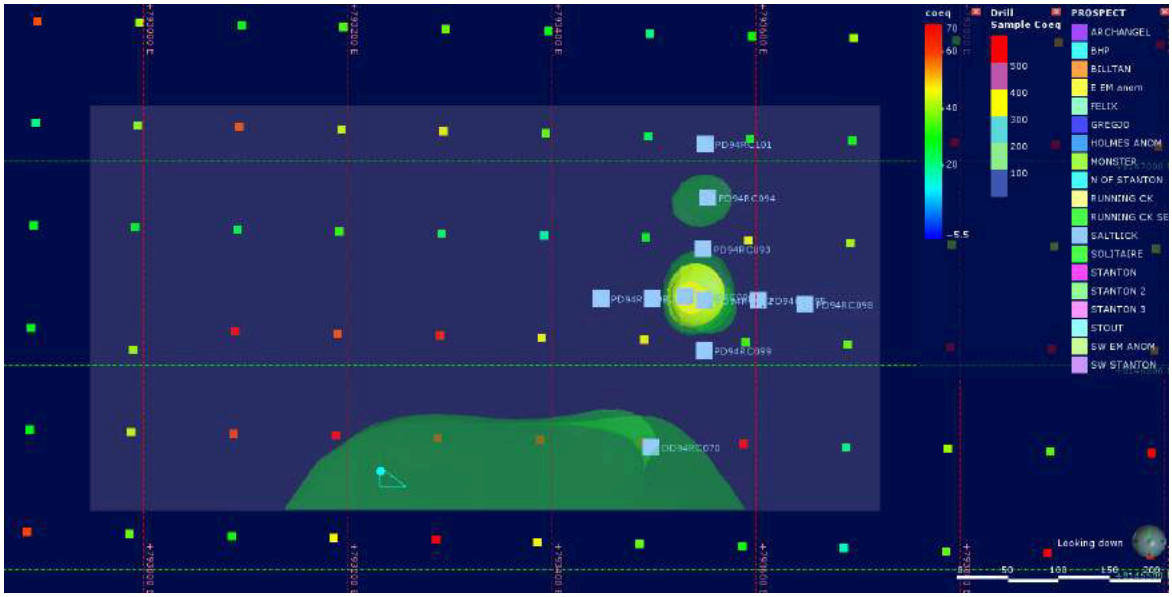
Small squares = geochemical samples – coloured by cobalt equivalent grade
Large squares = drill holes – coloured by prospect
Light green = low case isosurface; dark green = high case isosurface

2.10.2.7 Saltlick Prospect

The prospect is located immediately west of Felix and is defined by a consistent zone of anomalous cobalt geochemistry over an area of 1,000m x 500m. The existing drilling pattern has been centred off the copper and cobalt lag anomalies which are located 200-300m to the south and southeast. Despite this, broad zones of copper mineralisation were intersected. The bulk of the cobalt geochemical anomaly is untested.

The low case is based on a 200ppm Coeq isosurface on drilling samples. In Figure 27 it is seen as a small zone centered on low grade intercepts in holes DD90RC006 and DD94RC072. The upper case is based on a 100ppm Coeq isosurface using both lag and drill samples and extends over a significant area in the southern part of the anomaly.

Figure 27 Saltlick Prospect Exploration Target Plan View



Small squares = geochemical samples – coloured by cobalt equivalent grade
Large squares = drill holes – coloured by prospect
Light green = low case isosurface; dark green = high case isosurface

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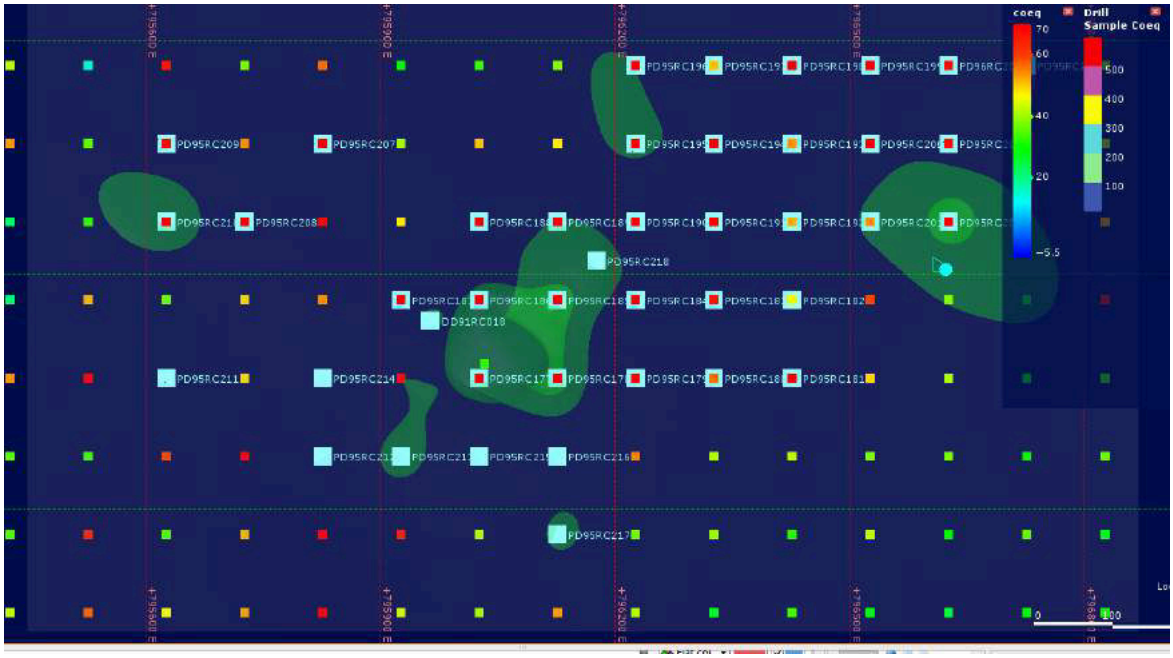
2.10.2.8 Stout Prospect

The Stout prospect is located 2,500m north of Running Creek prospect. The area has a well-developed cobalt geochemical anomaly defined over an area of 900m x 300m within which a discrete copper anomaly is present. The prospect appears to have been extensively drilled at 100m x 100m with disappointing results being reported. The western end of the anomaly remains untested.

With no significant intersections in the 42 drill holes (200m x 200m grid) over the prospect no low case was modelled. The high case was based on the 100ppm Coeq isosurface on drilling and lag samples. A number of discrete zones can be seen in Figure 28 centred on some low grade drill intercepts.

Figure 28 Stout Prospect Exploration Target Plan View



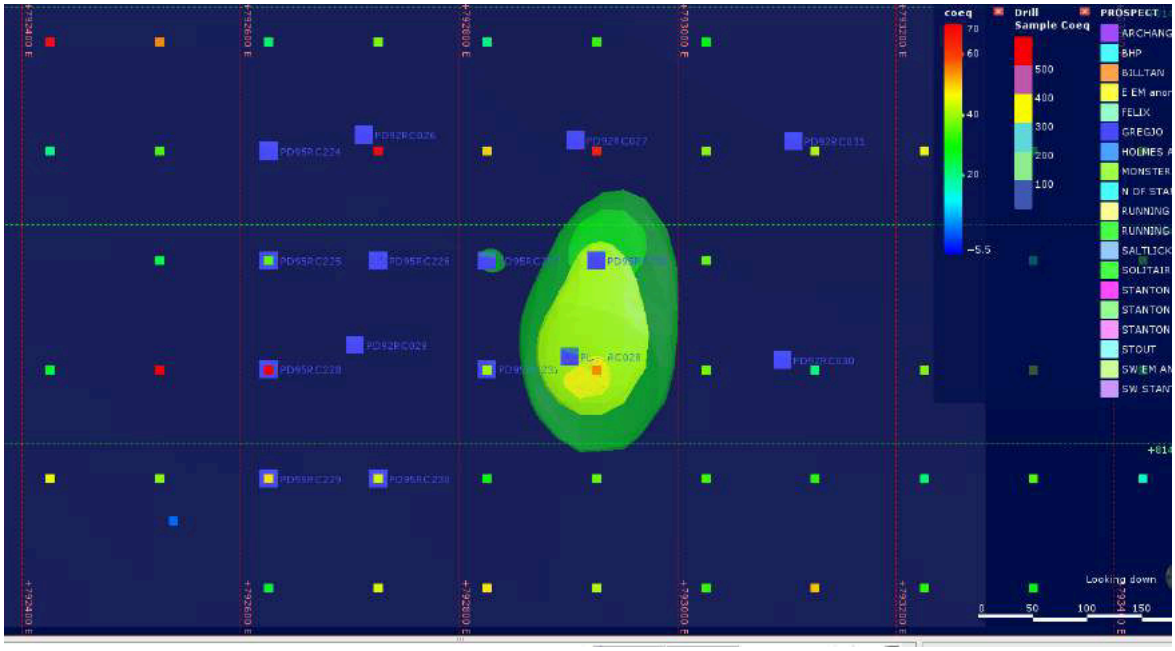
Small squares = geochemical samples – coloured by cobalt equivalent grade
Large squares = drill holes – coloured by prospect
Light green = low case isosurface; dark green = high case isosurface

2.10.2.9 Gregjo Prospect

The Gregjo prospect is located 4,000m to the south of Stanton Deposit. A discrete cobalt (700m x 400m) and copper (300m x 100m) geochemical anomaly has been partially tested with 14 drill holes. There were nine holes drilled over the Gregjo prospect. Cobalt results were not encouraging but there were some reasonable copper intersections.

The low case is based on a 200ppm Coeq isosurface located on two drill holes, see Figure 29. The high case used a 100ppm Coeq isosurface of both drilling and lag samples but is still centred on the drill samples as lag values are too low.

Figure 29 Gregjo Prospect Exploration Target Plan View



Small squares = geochemical samples – coloured by cobalt equivalent grade
Large squares = drill holes – coloured by prospect
Light green = low case isosurface; dark green = high case isosurface

2.11 Exploration Potential and Targets

2.11.1 Ravensgate Assessment

Ravensgate has concluded that NCL's projects are of merit and worthy of further exploration or development. With regard to exploration potential at Stanton, several drill holes ended in cobalt mineralisation and have therefore not defined the lower depth of the mineralised sequence. For example, Stanton drill hole RC22 terminated in 0.3% Co at 65m at the bottom of a 22m intersection from 43m. Opportunity exists in this area to further extend the mineralised system which could lead to conversion into additional resources.

The historic work carried out by CRAE is competent, extensive, well documented, valid and reliable which has been checked by internal and external consulting groups and forms a sound basis for NCL to identify targets and plan further exploration.

2.11.2 Uranium Exploration

Opportunities exist to explore the uranium and rare earth element (REE) potential of the Karns and Selby prospect areas. Given NCL's focus on developing a cobalt project, such opportunity could be pursued by negotiating a joint venture on these projects to a dedicated uranium and / or REE exploration company.

3. PLANNED EXPLORATION EXPENDITURE

NCL has provided to Ravensgate their proposed exploration expenditure for the two-year period following the capital raising, with the minimum subscription expenditure summarised in Table 20.

3.1 Exploration Strategy

The aim for the first two years of exploration on the Wollogorang project is to:

- increase the global mineral resource inventory at the Wollogorang project;
- upgrade current resources in the project from the Inferred to Indicated category according to the current JORC Code.

3.2 Exploration Budget and Expenditure

On raising the minimum subscription of $5million, the following programs will commence in Years 1 and 2:

3.2.1 Year 1 – Minimum Subscription

The Stanton cobalt-nickel-copper deposit is interpreted to have formed as a zone of brecciation within a dilatant zone on strike slip faulting, therefore it is relevant that a detailed structural analysis of the Wollogorang Project be undertaken with a focus on the main prospects identified by CRAE and additional prospects identified from historical lag and soil sampling. To this end, NCL propose to fly a detailed aeromagnetic survey across the main prospect area at a nominal 25m line spacing. The proposed area comprises 67km^2 which will be covered by 3,000 line kilometres for a budgeted cost of $40,000. If successful in defining structural targets, it is proposed to extend the survey to the greater part of EL 31272, which would cost approximately $176,000.

In addition to aeromagnetics, a trial of ground based IP surveying is planned to be undertaken over Stanton to identify the most appropriate method for detecting cobalt mineralisation. This trial is expected to cost approximately $44,000.

The main expenditure commitment in the first year will be drilling. NCL propose to drill out the Stanton resource at a hole spacing of 20m to a depth of approximately 100m, with reverse circulation percussion drilling. Up to five HQ triple tube diamond drill holes will also be drilled to supply material for bulk density and metallurgical test work. A further nine prospects will be drilled to test cobalt targets for additional resource potential. The drilling program will consist of a total of 127 drill holes for a total of 14,560m, costing approximately $1,020,000.

Table 20 Drilling Program & Exploration Activities Budget – Years 1 & 2 (Minimum Subscription: $5million)

Project	Category	Total Budget $K	Year 1 Drilling (metres)	Year 1 $K	Year 2 $K
Stanton	Resource Definition	308	4,400	308	
NE Stanton	Prospect	50.4	720	50.4	
South Stanton	Prospect	33.6	480	33.6	
SW Stanton	Prospect	28	400	28	
SE Stanton	Prospect	16.8	240	16.8	
Felix	Prospect	156.8	2,240	156.8	
NW Felix	Prospect	11.2	160	11.2	
East Felix	Prospect	67.2	960	67.2	
Running Creek / Stanton I & II	Prospect	190.4	2,720	190.4	
Stout	Prospect	156.8	2,240	156.8	
Newly Identified Resource/s	Resource Definition	1421.8	7,057	494.1	927.7
Drilling: SUB TOTAL		2,441	21,617	1,513.3	927.7
	Notice of Entry, Heritage & Access	6		6	
	Tenement Management	74		37	37
	Geophysical Surveys	220		220	
	Soil Sampling / Geochemistry	231		80	151
	Desktop Reviews	100		100	
	Tenement Purchases	20		20	
	Metallurgical Testing	40		40	
Exploration Activities: SUB TOTAL		691		503	188
TOTAL		3132		2016.3	1115.7

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3.2.2 Year 2 – Minimum Subscription

The vast majority of the expenditure in Year 2 will be on RC drilling. The focus will be on resource definition drilling at any of the prospects identified in year 1 with the potential to host a resource. Diamond drilling will also be employed as required.

On raising the maximum subscription of $6million, the following programs would commence in Years 1 and 2:

3.2.3 Year 1 – Maximum Subscription

In addition to aeromagnetics and the trial of ground based IP surveys, the geophysical trial will be expanded to include surveys such as gradient array IP, which is at a higher cost. It will also be

extended to cover promising prospects identified in the year 1 drilling. This additional work is expected to cost approximately $144,000.

In addition to the drilling outlined in section 3.2.1, a further 11 prospects will be drilled to test for cobalt-nickel-copper mineralisation. The drilling program would consist of a total of 203 drill holes for a total of 20,640m, at a cost of approximately $1,445,000.

3.2.4 Year 2 – Maximum Subscription

In addition to the strategy outlined in section 3.2.2, infill soil sampling over promising prospects will be undertaken.

Ravensgate considers that the exploration strategy proposed by NCL is consistent with the mineral potential and status of the Wollogorang Project and that the proposed exploration budget is consistent with the mineral potential and status of the projects. The proposed expenditure is sufficient to meet the costs of the exploration programs proposed and to meet statutory tenement expenditure requirements.

Ravensgate considers that this approach is consistent with the mineral potential and status of the Wollogorang project. As the majority of global cobalt production is a by-product of copper and nickel operations, a resource with cobalt as the principle valuable metal is somewhat unique. In Ravensgate's opinion, further exploration of the Wollogorang Project area is warranted. 152

4. REFERENCES

Ahmad, A., Wygralak, A.S., 1989. Calvert Hills, Northern Territory. 1:250,000 Geological Series (First Edition). Northern Territory Geological Survey, Darwin.

Ahmad, M. and Scrimgeour, I. R., 2013. Chapter 2: Geological framework: in Ahmad, M. and Munson, T. J., (compilers). 'Geology and mineral resources of the Northern Territory'. Northern Territory Geological Survey, Special Publication 5.

Battey, G. C., 1958. Final report "Calvert" Authority to Prospect No. 511. Mount Isa Mines Ltd. Northern Territory Geological Survey, Open File Company Report CR1958-0013.

Cardno, G. W., 1983. Final report on exploration carried out on Exploration Licence 2564, Exploration Licence 2565, Exploration Licence 3045 during the period October 1980–May 1983. Australia and New Zealand Exploration Company. Northern Territory Geological Survey, Open File Company Report CR1983-0171.

Cooke, D. R., Bull, S. W., Donovan, S., and Rogers, J. R., 1998. K-metasomatism and base metal depletion in volcanic rocks from the McArthur Basin, Northern Territory: implications for base metal mineralization. Economic Geology 93, 1237–1263.

Chemmet Pty Ltd, 2000. Feasibility Study on Mining and Production of Cobalt Nickel Concentrate from Running Creek EL8413, Information Memorandum 2000, Sydney: CHEMMET PTY LTD ACN 055 384 373.

Davies, E. R., 1982. Annual report on Exploration Licence 2564 and Exploration Licence 2565 on exploration carried out during the first year of tenure October, 1980–October, 1981. Arnhem Land Mining Ltd. Northern Territory Geological Survey, Open File Company Report CR1982-0041.

Department of Primary Industry and Resources. Northern Territory Government: https://dpir.nt.gov.au/mining-and-energy/mine-rehabilitation-projects/redbank-mine/history

Erias, 2017. Wollogorang Project Flora, Fauna and Invasive Species Report. Prepared for Coolabah Pty Ltd. Report No. 01273A_1_v1, March 2017.

Fisher, W. J., 1977. End of year report on EL 1185 – Running Creek, 28th March, 1976 to 27th March, 1977. Secured Loans and Developments Ltd. Northern Territory Geological Survey, Open File Company Report CR1977-0125.

Fisher, W. J., 1980. EL 1185 Secured Loans and Developments Limited, final report year ended 27.3.1980. Secured Loans and Developments Ltd. Northern Territory Geological Survey, Open File Company Report CR1980-0193.

Fisher, W. J., 1989. EL 5468 year 2: annual report on the exploration program, period: 13-8-88 to 12-8-89. WJ and EE Fisher Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1989-0588.

Fisher, W. J., 1991a. EL 5468 year 3: annual report on the exploration program, period 13.8.89 to 12.8.90. WJ and EE Fisher Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1991-0126.

Fisher, W. J., 1991b. Mineral Claims MCN's 2688, 2689, 2690, 2691 within EL 5468. Report on exploration program. WJ and EE Fisher Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1991-0216.

Gablina, I. F., 1981. New data on formation conditions of the Dzhezkazgan copper deposit. International Geology Review 23, 1303–1311.

Girschik, H. F., 1992. First annual and final report on Exploration Licence 7351 eastern McArthur Basin, Northern Territory, for the period 31 July 1991 to 30 July 1992. Argold Holdings Pty Ltd and Kriston Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1992-0570.

Goulevitch, J., 2001. Statement of Identified Mineral Resources, Stanton Cobalt - Nickel - Copper Prospect, Darwin: Exploremin Pty Ltd, Geological Consultants.

Goulevitch, J., 2002. Final Report EL8413 "Running Creek", Darwin: Exploremin Pty Ltd. Geological Consultants.

Haines, P. W., Pietsch, B. A., Rawlings, D. J., and Madigan, T. L., 1993. Mount Young, Northern Territory (Second Edition). 1:250 000 geological map series explanatory notes, SD 53-15. Northern Territory Geological Survey, Darwin.

Harder, W. M., 2000. An Investigation of the Work done by CRA Exploration Pty Ltd on the Stanton Prospect NT EL8413

Jackson, M. J., Muir, M. D., and Plumb, K. A., 1987. Geology of the southern McArthur Basin, Northern Territory. Bureau of Mineral Resources, Australia, Bulletin 220.

Knutson, J., Ferguson, J., Roberts, W. M. B., Donnelly, T. H., and Lambert, I. B., 1979. Petrogenesis of the copper-bearing breccia pipes, Redbank, Northern Territory, Australia. Economic Geology 74, 814–826.

Lustwerk, R. L., and Wasserman, M., D., 1989. Water escape structures in the Coates Lake Group, Northwest Territories, Canada, and their relationship to mineralization at the Redstone stratiform copper deposit: in Boyle RW, Brown AC, Jefferson CW, Jowett EC and Kirkham RV (editors) 'Sediment hosted stratiform copper deposits'. Geological Association of Canada, Special Paper 36, 207–224.

McLaughlin, D., Ramsden, A. R., Sharpe, J. L., and Williams, P. A., 2000. Minerals from the Sandy Flat pipe, Redbank, Northern Territory. Australian Journal of Mineralogy 6, 3–7.

Merle, O., and Vendeville, B., 1995. Experimental modelling of thin-skinned shortening around magmatic intrusions. Bulletin of Volcanology 57, 33–43.

Mineral Estates Pty Ltd, Hydromet Corporation Limited and Auminco Coal Pty Ltd, 2012. Stanton Option Agreement, Sydney: Auminco.

Morris, D. G., Taylor, D., and Menzies, D., 1996. Genesis of the Stanton copper/cobalt mineralisation, NT. Rio Tinto Exploration, Internal Report 22175.

Orridge, G. R., and Mason, A. A. C., 1975. Redbank copper deposits: in Knight CL (editor) 'Economic geology of Australia and Papua New Guinea'. Australasian Institute of Mining and Metallurgy, Monograph Series 5, 339–342.

Page, R. W., and Sweet, I. P., 1998. Geochronology of basin phases in the western Mount Isa Inlier, and correlation with the McArthur Basin. *Australian Journal of Earth Sciences* 45, 219–232.

Page, R. W., Jackson, M. J., and Krassay, A. A., 2000. Constraining sequence stratigraphy in north Australian basins: SHRIMP U-Pb zircon geochronology between Mt Isa and McArthur River. Australian Journal of Earth Sciences 47, 431–459.

Palmer, D. C., 1992. Running Creek farm-in and joint venture, EL 5468 Running Creek, NT, EL 7174 Collar Creek, NT, EL 7225 Hobblechain Creek, NT. Combined annual report for period ending 30th March, 1992. CRA Exploration Pty Ltd and WJ and EE Fisher Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1992-0188.

Palmer, D. C., 1993a. Running Creek farm-in and joint venture, EL 5468 Running Creek, NT. Fifth annual report for year ending 12 August, 1992. CRA Exploration Pty Ltd and WJ and EE Fisher Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1993-0136.

Palmer, D. C., 1993b. Running Creek farm-in and joint venture, EL 5468 Running Creek, NT (excised area). Final report for period ending 12 August, 1993. CRA Exploration Pty Ltd and WJ and EE Fisher Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1993-0687.

Palmer, D. C., Louwrens, D. J., and Menzies, D. C., 1995. Running Creek farm-in and joint venture, Mineral Claims 2688–91, 4561–67, 4604–06 and 4608–14 (NT). Final report for period ending 14th December 1994. CRA Exploration Pty Ltd and WJ and EE Fisher Pty Ltd. Northern Territory Geological Survey, Open File Company Report CR1995-0281.

Pietsch, B.A., Rawlings D.J., Creaser P.M., Kruse P.D., Ahmad M., Ferenzi P.A., and Findhammer T.L.R., 1991. Bauhinia Downs SE5303, 1:250,000 Geological Map Series, Explanatory Notes, Northern Territory Geological Survey, Darwin.

Randell, J., 2012. Independent Geological Report. Stanton Nickel-Cobalt Deposit, for Auminco Coal Pty Ltd. Geos Mining Mineral Consultants. Job No. 2463-03.

Rawlings, D. J., 1997. High-level intrusions in the McArthur Basin, NT: deformation styles in the host stratigraphy and metallogenic implications: in 'New developments in research for ore deposit exploration. Third National Conference of the Specialist Group in Economic Geology, Canberra, Australia, January 30–31, 1997.' Geological Society of Australia, Abstracts 44, 59.

Rawlings, D. J., 1999. Stratigraphic resolution of a multiphase intracratonic basin system: the McArthur Basin, northern Australia. Australian Journal of Earth Sciences 46, 703-723.

Rawlings, D. J., 2002. Sedimentology, volcanology and geodynamics of the Redbank package, northern Australia. PhD thesis, Centre for Ore Deposit and Exploration Studies (CODES), University of Tasmania, Hobart.

Rawlings, D. J., 2006. Robinson River 1:250,000 Geological Map and Explanatory Notes, Northern Territory Geological Survey, Darwin.

Rawlings, D. J., 2012. EL28567 Running Creek Annual Technical Report for period 24th October 2011 to 23rd October 2012. Northern Territory Geological Survey, Closed file Company Report, Darwin.

155

Rawlings, D. J., 2013. EL28567 Running Creek Annual Technical Report for period 5th January 2012 to 4th January 2013. Toro Energy Ltd, Company Report.

Rawlings, D. J., 2013a. EL27429 Karns Annual Technical Report for period 24th October 2012 to 23rd October 2013. Toro Energy Ltd, Company Report.

Rawlings, D. J., and Page, R. W., 1999. Geology, geochronology and emplacement structures associated with the Jimbu Microgranite, McArthur Basin, Northern Territory. Precambrian Research 94, 225–250.

Rawlings, D. J., Bull, S., and Cooke, D., 1996. Report on Cu-Co- Ni sulphide mineralisation in the Stanton-Running Creek area. Confidential CODES report to CRA Exploration Pty Ltd.

Resource Engineers Pty Ltd, 2001. Scoping Study for Development of the Stanton Nickel Cobalt Deposit, Brisbane: Resource Engineers Pty. Ltd.

Rod, E., 1978. Decollement folds in Redbank area, Northern Territory. Journal of the Geological Society of Australia 25, 89–95.

Smith, J., 2005. Stanton (NT) Resources and Potential, Brookfield, Brisbane: Discriminex Pty Ltd.

Trainor, C., 1997. Natural and Cultural Heritage Values of Wollogorang Station, NT. [Online] Available at: http://cdu.academia.edu/DrColinTrainor/Papers/938301/Natural_and_cultural_heritage_values_of_Wollogorang_Station_Northern_Territory

Walker, T. R., 1989. Application of diagenetic alterations in redbeds to the origin of copper in stratiform copper deposits: in Boyle RW, Brown AC, Jefferson CW, Jowett EC and Kirkham RV (editors) 'Sediment hosted stratiform copper deposits'. Geological Association of Canada, Special Paper 36, 85–96.

Wall, V. J., and Heinrich, C. A., 1990. Breccia pipes at Redbank, southern McArthur Basin: copper mineralisation by fluid mixing. Mount Isa Inlier Geology Conference, Monash University, Abstracts (unpublished).

White, B., 2009. Selby Northern Territory Exploration Licence No 22251 Partial Surrender Report for the period 24th April 2003 to 23rd April 2009, Legend International Holdings.

Wilson, D., 1994. Characterisation of Stanton Cobalt Nickel Copper Prospect. A Report Prepared for Resource and Processing Developments. CRA Advanced Technical Development, Melbourne.

Wong, K. Y., 1997. Flotation Testing cobalt-nickel Ores for Amalg Resources NL. Optimet Report 96071.

5. LIST OF ABBREVIATIONS

3D	Three dimensional
AAS	Atomic Absorption Spectroscopy
Ag	Silver
ASX	Australian Securities Exchange
Au	Gold
bcm	Bank cubic meters
BIF	Banded iron formation
Co	Cobalt
CSV	Comma-separated values
Cu	Copper
DD	Diamond-core Drill hole
DIGHEM	An EM frequency-domain multi-coil system
EM	Electromagnetic geophysical survey
EOH	End of hole
Fe	Iron
Ga	Giga annum - 1 billion years ago
GPS	Global positioning system
g/t	Grams per tonne
ha	hectare
ICP-OES	Inductively coupled plasma - optical emission spectrometry
IGR	Independent Geologist's Report
IP	Induced polarisation
JORC	Joint Ore Reserves Committee
JORC Code	2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves
JV	Joint Venture
K	Thousand(s)
km	Kilometre(s)
km²	Square kilometre(s)
LAG	A geochemical method based on sampling lag material
m	Metre(s)
M	Million(s)
Ma	Mega annum - 1 million years ago
MAIG	Member of the Australian Institute of Geoscientists
MAusIMM	Member of the Australasian Institute of Mining and Metallurgy
Mn	Manganese
Mt	Million tonnes
Mtpa	Million tonnes per annum
Ni	Nickel
nT	Nanotesla
oz	Ounce (Troy ounce - measure of weight)
ppb	Parts per billion; a measure of concentration
ppm	Parts per million; a measure of concentration
Pd	Palladium
Pt	Platinum
XRF	X-ray fluorescence instrument

RAB	Rotary air blast (drill hole)
RC	Reverse circulation (drill hole)
Ro	Vitrinite reflection measurement unit
SEDEX	Sedimentary exhalative (mineral deposit classification)
SEM	Scanning electron microscope
t	Tonne(s)
t/m^3	Tonnes per cubic metre
TEM	Transient electromagnetic geophysical survey
TMI	Total magnetic intensity
U	Uranium
VHMS	Volcanic hosted massive sulphide (mineral deposit classification)
VALMIN	Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for Independent Expert Reports
Zn	Zinc

6. GLOSSARY

aeromagnetic	A survey undertaken by helicopter or fixed-wing aircraft for the purpose of recording magnetic characteristics of rocks by measuring deviations of the Earth's magnetic field.
anomaly	An area where exploration has revealed results higher than the local background level.
asbilite	manganese-base metal oxide.
assay	The testing and quantification metals of interest within a sample.
auger	Geochemical sampling technique involving the use of either a hand auger or a small drilling rig with an auger bit.
Cainozoic	The youngest geologic time period, pertaining to rocks younger than about 66 million years.
carbonate	Rock or mineral dominated by the carbonate ion (CO^{2-}_3), of sedimentary or hydrothermal origin, composed primarily of calcium, magnesium or iron and carbon and oxygen. Essential component of limestones and marbles.
chlorite	A green coloured hydrated aluminium-iron-magnesium silicate mineral common in metamorphic rocks.
Craton	An old and stable part of the continental lithosphere.
diamond drilling	Drilling method employing a (industrial) diamond encrusted drill bit for retrieving a cylindrical core of rock.
domain	Geological zone of rock with similar geostatistical properties; typically a zone of mineralisation
dykes	A tabular body of intrusive igneous rock, crosscutting the host strata at a high angle.
fault	A wide zone of structural dislocation and faulting.
felsic	Igneous rocks with a large percentage of light-coloured minerals such as quartz, feldspar, and muscovite. It is contrasted with mafic rocks, which are relatively richer in magnesium and iron.
geochemical	Pertains to the concentration of an element.
geochronology	The science of determining the absolute age of rocks. Dating methods involve measuring the amount of radioactive decay of a radioactive isotope with a known half-life.
geophysical	Pertains to the physical properties of a rock mass.
granite	A coarse-grained igneous rock containing mainly quartz and feldspar minerals and subordinate micas.
gravity survey	Measurements of gravitational acceleration and gravitational potential at the Earth's surface searching for mineral deposits.
ground magnetic	Geophysical survey method using a hand-held magnetometer to record the strength of the earth's magnetic field usually along a grid.
induced polarisation	Geophysical survey technique used to identify the electrical chargeability of subsurface materials.
intrusive	Any igneous rock formed by intrusion and cooling of hot liquid rock below the earth's surface.
lithology	The description of a rock unit's physical characteristics visible in hand or core samples, such as colour texture grain-size and composition.
lode	A deposit of metalliferous ore formed in a fissure or vein.
mafic	Igneous rock composed dominantly of dark coloured minerals such as amphibole pyroxene and olivine, generally rich in magnesium and iron.

magmatic	Derived from or associated with magma. Magma is a complex high-temperature fluid substance present within the earth, which on cooling forms igneous rocks.
metamorphic	A rock that has been altered by metamorphism from a pre-existing igneous or sedimentary rock type.
metamorphism	Alteration of the minerals, textures and composition of a rock caused by exposure to severe heat, pressure and chemical actions.
Mineral Resource	Concentration of mineralisation in the earth for which there are reasonable prospects for eventual economic extraction.
Ore Reserve	The economically mineable part of a Mineral Resource.
Orosirian	The third geologic period in the Paleoproterozoic Era and lasted from 2,050Ma to 1,800Ma
outcrop	A visible exposure of bedrock or ancient superficial deposits on the surface of the Earth.
overprinting	The superposition of a new set of structural geological features on an older set.
peperite	Rock with texture formed when magma comes into contact with wet sediments.
petrography	Detailed descriptions of rocks typically using a microscope to study thin sections of rock specimens.
plunge	The vertical angle between a horizontal plane and the line of maximum elongation (of an orebody for example).
pluton	Body of intrusive igneous rock, typically several kilometres in dimension
quartz	Common mineral composed of crystalline silica, with chemical formula SiO_2.
RC drilling	Reverse Circulation. A percussion drilling method in which the fragmented sample is brought to the surface inside the drill rods, thereby reducing contamination.
resource	In-situ mineral occurrence from which valuable or useful minerals may be recovered.
sedimentary	A term describing a rock formed from sediment.
shear	A deformation resulting from stresses that cause rock bodies to slide relatively to each other in a direction parallel to their plane of contact.
siegenite	Cobalt nickel sulfide mineral with formula $(Ni,Co)_3S_4$
sill	A geostatistical term describing the quality of variance pertaining to a variogram structure.
soil sampling	The collection of soil specimens for mineral analysis.
strata	Sedimentary rock layers.
stratigraphic	Pertaining to the composition, sequence and correlation of stratified rocks.
strike	Horizontal direction or trend of a geological strata or structure.
structural	Pertaining to rock deformation or to features that result from it.
succession	Group of rock strata that succeed one another in chronological order.
volcanic	Rocks formed or derived from volcanic activity.

APPENDIX 1

JORC Code Table One

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Part	Criteria	Comment
1-1	Sampling Techniques	All drilling on the deposit was undertaken by CRAE in the 1990's. Samples used in the resource estimation were obtained from reverse circulation percussion (RC) and diamond drilling (DD) drill holes. A total 35 holes for 3,430m were completed at the Stanton Deposit. Of these, 14 are RC for 649m, and 21 were DD for 2,781m. Many of these holes are drilled outside the main area of mineralisation with only 16 holes containing samples used in the resource estimation. Only 5 of the RC holes were used in the grade estimate providing a total of 87 samples for 141m located in the mineralised domains. 11 DD holes were used in the grade estimate with a total of 145 samples for 201m located in the mineralised domain. Drill samples used in the Exploration Target range were obtained from 24 DD holes for 2,967m and 177 RC holes for 13,441m of drilling.
		Diamond core was drilled to obtain high quality samples that were logged for lithological, mineralogical and structural information. Sampling of diamond core was also on one meter intervals with the core being cut in half using a diamond core saw. The remaining drill core is stored in the NTGS core storage facility in Darwin.
		Samples are assumed to be representative of the mineralised zone.
	Drilling Techniques	Details of the RC method were not recorded in the original CRAE drilling logs or reports. DD is mix of both HQ and NQ core size. Core orientation was not undertaken.
1-2	Drill Sample Recovery	There is not record or documentation on RC sample recovery. These holes are relatively shallow and it is expected there was reasonable sample return. Diamond drill core is assessed by measuring the recovered drill length against the actual drilled. Diamond drill recovery is mostly100%. There are some areas of high core loss which were excluded from the grade estimation where recovery was less than 80%.
		Measures taken to maximise sample recovery were not documented in original drill logs or reports by CRAE.
		Co grade was compared to core recovery on a scatter plot, with no clear trend or bias apparent. One sample with the highest grade came from the interval with the lowest recovery strongly suggesting that very poor core recovery can lead to a grade bias.
1-3	Logging	All drill holes have been logged in full and record standard criteria such as lithology, texture, alteration, mineralisation and structure. Geotechnical data such as drill core recovery and RQD were recorded for DD. Recording of weathering intensity was not well documented which will lead to uncertainty in the modelling of oxide/transition/sulphide material in metallurgical studies.
		All logging is qualitative in nature. There is no record of the core being photographed by CRAE. It is possible some of the remaining core has been

Part	Criteria	Comment
		spectrally logged (Hilogger), but this needs confirmation with the NT Dept of Primary Industry and Resources.
		Holes are geologically logged for their entire length.
1-4	Sub-Sampling Techniques and Sample Preparation	All DD holes were sampled by cutting the core longitudinally in half using diamond saws. Sampling was mostly half core with quarter core in places. Metallurgical test holes DD94RC038 & 39 had no core retained from the mineralised interval suggesting the entire core was used for test work.
		Splitting or subsampling method for PD was not documented by CRAE.
		Sample preparation method was not documented by CRAE.
		Quality control procedures for sub-sampling were not documented by CRAE.
		Quality control procedures for sample representatively were not documented by CRAE.
		Sample sizes were not documented by CRAE. Mineralogical petrology shows fine grained well dispersed minerals suggesting particle size in the samples should not have a significant impact on grade.
1-5	Quality of Assay Data and Laboratory Tests	Samples were submitted to Amdel Laboratories, Darwin for assay of Au, Pd and Pt by fire assay/AAS; Ag, As, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Ti, Th, U, and Zn by ICP-OES; and Ba by XRF methods.
		CRAE report that downhole gamma logging was conducted. Ravensgate did not manage to locate these logs.
		CRAE reports that approximately 10% of RC and DD samples were selected for check analyses. Results of check analysis for other projects in the area were located but not for Stanton deposit holes.
1-6	Verification of Sampling and Assaying	There is no record of samples being submitted to an umpire laboratory.
		Twin hole comparisons have not been attempted due to absence of twin holes.
		Primary data was available in scanned open file annual reports on exploration activities. Ravensgate compared approximately 5% of the digital assay and geology logging data to the original drill logs and no discrepancies were encountered. Minor downhole depth errors were detected and corrected during import and validation in Vulcan software.
		There is no adjustment of assay data.
1-7	Location of Data Points	CRAE report that collar locations were surveyed using differential global positioning system (DGPS). Only two holes have down-hole survey records. The method of downhole survey is not recorded.
		All coordinates had been converted to MGA zone 53 for use in this resource estimate.
		30m spaced gridded topography was supplied by NCL. The source of this data was not specified. Topography in the vicinity of deposit is very flat and would have no material impact on the resource estimate.
1-8	Data Spacing and Distribution	On one section the drill spacing is 20m or closer along the section. Elsewhere spacing is approximately 40m x 40m. Geochem soil sampling was conducted on a 100m x 100m grid.
		Drill spacing has allowed reasonable geological interpretation to be completed. Variogram ranges are generally greater than the drill spacing

Part	Criteria	Comment
		allowing reasonable estimation of the mineralisation grade continuity for the inferred classification.
		Samples are collected over a range of intervals with the majority at two metres or less. Two metre compositing was used in grade estimation.
1-9	Orientation of Data in Relation to Geological Structure	Holes were generally drilled vertically or with 60 degree dip. Stratigraphy and mineralisation is interpreted to be flat lying so steep drilling orientations will provide the most representative sampling. Semi-vertical faults have been interpreted to offset the stratigraphy. The vertical drilling has not been effective in identifying the location of these structures.
		No orientation based sampling bias has been identified in the data.
1-10	Sample Security	CRAE reports do not mention sample security.
1-11	Audits or Reviews	No audits or review of sampling technique and data has been documented.

Section 2 Reporting of Exploration Results

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

Part	Criteria	Comment
2-1	Mineral Tenement and Land Tenure Status	The Stanton Deposit is located on exploration licence EL31272. Mangrove Resources Pty Ltd (Mangrove), a 100%-owned subsidiary of Coolabah Group Pty Ltd, is the listed holder of the Wollogorang Project. NCL has entered into a Heads of Agreement with Mangrove to acquire the Wollogorang Project.
		Security for tenure for NCL is contingent on the agreement with Mangrove Resources Pty Ltd.
2-2	Exploration Done by Other Parties	All exploration work was conducted by CRAE from 1990-95.
2-3	Geology	Mineralisation consists of disseminated sulphides and oxides hosted in the Proterozoic interbedded sediment and volcanic units of the Gold Creek Volcanics. Localised breccia pipes and associated faulting control the local extents of the mineralisation. The deposit geology has been well documented in publicly available reports and papers. The main sulphides ore mineral identified is siegenite (Co-Ni sulphide). Near the surface in the oxide zone the cobalt ore mineral has been identified as a cobalt oxide.
2-4	Drill Hole Information	All drill hole collars with location, elevation, depth, dip and azimuth are tabulated in the Ravensgate resource report.
2-5	Data Aggregation Methods	Exploration results are not reported for Stanton Deposit. These are superseded by mineral resource estimation statements. 2m downhole compositing was used during grade estimation for the resource model.
		Exploration results are not reported for Stanton Deposit.
		Metal metal equivalent values were notreported. Metal equivalent values were used only when assessing the volume of mineralised material for the Exploration Target.

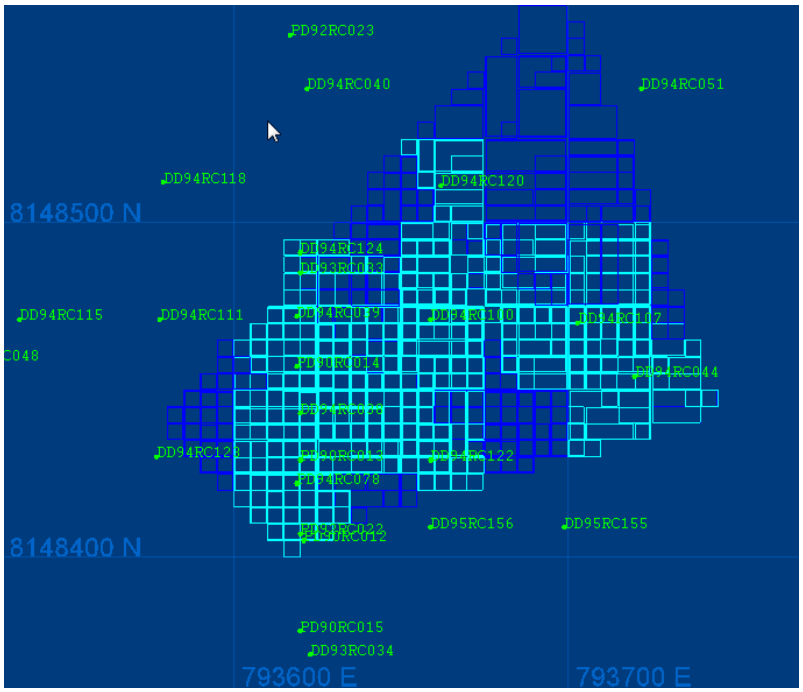
Part	Criteria	Comment
2-6	Relationship Between Mineralisation Widths and Intercept Lengths	Exploration results are not reported for Stanton Deposit.
		Stratigraphic contacts are observed to be perpendicular to the vertical drill holes indicating the stratigraphy is horizontal. Mineralisation is interpreted to be controlled by stratigraphy and is modelled as being sub-horizontal.
		For the vertical holes the down-hole intercepts will represent the true width of mineralisation. For the inclined holes the downhole intercept will be slightly longer then the true width of mineralisation.
2-7	Diagrams	Representative plans and sections are included.
2-8	Balanced Reporting	Exploration results are not reported for Stanton Deposit.
2-9	Other Substantive Exploration Data	Metallurgical test work was conducted on two samples of sulphide zone diamond core. Results suggest that grinding and floatation will produce a Co-Ni-Cu concentrate with 70-75% recovery of Co. No metallurgical test work was conducted on the oxide mineralisation.
2-10	Further Work	Drilling is proposed to replicate CRAE drilling results especially in the high grade zones with significant core loss. Other drilling is planned to infill and test the extents of mineralisation and obtain samples for metallurgical test work and in-situ bulk density measurements.
		Future drill planning requirements are yet to be completed.

Section 3 Estimation and Reporting of Mineral Resources

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

Part	Criteria	Comment
3-1	Database Integrity	Drill data is currently located in MS Excel spreadsheets. This system does not manage data security or record editing history. Ravensgate conducted checks of some of the MS Excel data to the original logs located in the open file annual exploration reports and did not located any errors in assay and lithology data.
		Data validated during importing into Vulcan. Checks include: • missing intervals • overlapping intervals • duplicate sample locations • data intervals beyond end of hole.
3-2	Site Visits	The Competent Person, David Reid (Ravensgate, Principal Resource Geologist) visited the Stanton Project area on 16 May 2017 and viewed Stanton drill core at the Darwin Core Library Archive on the 17 May 2017. Evidence of rehabilitated drill sites was observed but only one hole collar could be located. Drill core from holes DD93RC033, DD94RC038, DD94RC039 and DD94RC044 were examined at the DME core library in Darwin.
		A site visit has been conducted by the CP.
3-3	Geological Interpretation	Mineralised zone interpretation appear to show reasonable consistency between drill hole and between section lines leading to good confidence in the mineralisation model. The level of weathering is highly variable and the model is of lower local confidence for the oxide - sulphide zone domaining.
		Geological information used included drill hole logging and surface outcrop mapping. It has been assumed that the logging is consistent between the various phases of drilling as it was all undertaken by CRAE. Mineralisation domains are based on sample assays and assumed to be controlled mainly by the lithological layering.
		Alternative geological interpretations were not assessed. An alternative structurally controlled mineralisation model has been postulated but the observations in core match the combination of structural fluid pathways and lithology layering controls for the current model.
		Zones of brecciation, faulting and particular sandstone/arenite stratigraphy has been postulated to provided flow pathways for mineralising fluids. Mineralised domain modelling has been guided by the orientation of the stratigraphy and limited in extent to the interpreted boundary faults.
		Continuity of the grade appears to be controlled by the location of the favourable interbedded stratigraphy and brecciation of adjacent units.
3-4	Dimensions	Mineralisation extends from surface to a maximum depth of 80m over an area of approximately 200mE x 160mN.
3-5	Estimation and Modelling Techniques	Vulcan software was used to estimate grade into 25x25x5m sized blocks using ordinary kriging. A minimum of 3 and maximum of 20 composites were used in each estimation. Separate domains were used to select composites to estimate the block grades. Domains were based on Co mineralisation with the same sample selection and weights applied to estimation of Co, Ni and Cu. 35% of the resource is extrapolated more than 25m from the closest drill hole with a maximum distance of 85m from a drill hole.

Part	Criteria	Comment
		Comparison was made to previous sectional resource estimates. The current estimate is lower in tonnage but slightly higher grade, No production has occurred.
		Assumed recovery of Ni and Cu has been used.
		Grade estimation of deleterious elements was not conducted.
		Estimation block size of 25x25x10m is approximately half the nominal drill spacing of 40x40m over the majority of the deposits. Sample search of 100x100x200m radius was used to ensure the majority of blocks in the model are estimated.
		Estimation block size is larger than the expected SMU. The estimation is highly smoothed and unlikely to provide a good prediction of recovered tonnage and grade at higher cut off grades.
		Correlation between the Co, Ni and Cu was assumed with the Co domains used to constrain the Ni and Cu estimates. This assumption proved reasonable for the Ni estimation. Cu grades were enriched in the oxide zone were probably underestimated in this zone.
		Weathering domains were used to assign DISBD values. Lithology and mineralisation domains were used to control the Co, Cu and Ni estimates.
		No high grade Co or Ni outliers were observed. Some high Cu composite outliers were observed. Samples were excluded from areas of poor core recovery (<90%), some of these excluded samples contained some very high Co grade but were not considered representative due to potential bias in the lost core.
		Block grades were visually compared to drill hole grades. Global average grades for each estimation domain were reasonably consistent between composite grade and block estimates. Domains high outlier Cu grades were the exception, but the declustered mean of the composites was reasonably close to the block estimate mean.
3-6	Moisture	Tonnage is reported on a dry basis.
3-7	Cut-off Parameters	Resources have been reported from within the mineralised domains using a cut-off expected to produce an economic mining product.
3-8	Mining Factors or Assumptions	Open pit mining using excavator and truck was assumed. A pit optimisation study was used to evaluate the economics of the mining and processing. The study was based on producing a bulk concentrate at the nearby Redbank plant or a new plant constructed at Stanton. Metallurgical recovery of 70% and metal prices of A$60,000/t Co, A$12,000/t Ni and A$7,500 Cu were used to test a number of different scenarios including the recovery of only Co. For all the scenarios, an optimum pit shell enclosing the upper zone of mineralisation was produced. However, even with a 50% increase in the metal price the pit shell would not reach the lower mineralisation. It is therefore concluded that this deeper mineralisation is too low grade and the incremental strip ratio is too high to mine via an open pit. Mineralisation below 15mRL was excluded from the Mineral Resource estimate due to low expectations that it would be economic to mine. The pit optimisation report noted that capital costs for construction of a new plant are unlikely to be recovered from the mining of the Stanton deposit alone and the economics for the project relies on either the availability of the Redbank plant or the discovery of further Co-Ni-Cu deposits in the near vicinity which can be added to the resource base.

Part	Criteria	Comment
3-9	Metallurgical Factors or Assumptions	Preliminary metallurgical test work was conducted on two samples of sulphide zone from diamond drill core. Recovery of between 70-75% of Co were obtained. Recovery of nickel and copper were assumed to be the same as cobalt when evaluating the Exploration Target mineralised volumes. No metallurgical test work had been conducted on the oxide zone material which makes up the bulk of the Mineral Resource.
3-10	Environmental Factors or Assumptions	No assumption or allowance has been made for possible waste and process residue.
3-11	Bulk Density	Bulk density DISBD was assumed based on weathering domain. Oxide material used DISBD of 2.25 and sulphide material used a DISBD of 2.55. For the exploration target a DISBD of 2.45 was applied (average of oxide and fresh DISBD)
		CRAE made five measurements for density which were lower than the values applied to the model. There were no details of the method and the location. Ravensgate did not consider these to be representative.
		Bulk density assignment assumed the primary control was the intensity of weathering.
3-12	Classification	The Mineral Resource classification has taken into account data density and quality criteria as well as confidence in geological interpretation and continuity which has been guided by estimation parameters.
		The data used in the resource estimate was generated by CRAE during their 1990's exploration programs.
		The Mineral Resource estimate is classified as Inferred Resource and appropriately reflects the view of the Competent Person. Blocks greater than 25m from a drill hole were considered to be extrapolated and these represent 35% of the inferred mineral resource. Extrapolated blocks are shown in dark blue in the image below. 

Part	Criteria	Comment
3-13	Audits or Reviews.	Ravensgate conducted internal peer review on the resource report.
3-14	Discussion of Relative Accuracy / Confidence	Grade variability of samples is reasonable (low coefficient of variation) for the use of ordinary kriging grade estimation. Low nugget values and drill spacing which exceeds the observed variogram ranges suggests the grade estimation should provide a reasonable estimate for the deposit. Cu composites contained some high grade outliers and local accuracy of the grade estimation may be affected in the vicinity.
		The statement relates to the global estimates of tonnes and grade. The resource is expected to support a scoping level study with expected range of +-50%.
		No production has occurred.

Northern Cobalt

All Mining Legal PTY LTD

27 June 2017

The Directors
Northern Cobalt Limited
Level 3
29 King William Street
ADELAIDE SA 5000

Dear Sirs

SOLICITOR'S REPORT ON TENEMENTS

This Solicitor's Report (**Report**) is prepared for the inclusion in a prospectus to be dated on or about 28 June 2017 for issue by Northern Cobalt Limited ACN 617 789 732 (**Company**).

Scope

1. We have been requested to report on certain mining tenements in which the Company intends to acquire an interest (**Tenements**).
2. The Tenements are located in the Northern Territory and are listed in the Tenement Schedule (**Schedule**) at the end of this Report.
3. This Report is limited to the Searches detailed at clause 4 of this Report.

Searches

4. For the purpose of this Report, we have conducted searches and made enquiries is respect of the Tenements as follows (**Searches**):
   (a) we have obtained Ministers Certificates for the Tenements from the Northern Territory Department of Primary Industry and Resources (**Department**) pursuant to the *Mineral Titles Act* 2010 (NT) (**Mining Act**) on 15 June 2017;
   (b) we have obtained searches of underlying native title and pastoral tenure through the online STRIKE system maintained by the Department on 18 June 2017;
   (c) on 19 June 2017 we obtained further information in relation to the Tenements from the Department;
   (d) we have obtained Land Property Searches through the Integrated Land Information System maintained by the NT Land Titles office on 19 June 2017;
   (e) we have obtained extracts of registered native title claims and native title determinations that apply to the Tenements, as determined by the National Native Title Tribunal (**NNTT**). This material was obtained on 19 June 2017. Details of native title claims and determinations are set out in Part II of the attached Schedule; and
   (f) we have obtained searches from the Register of Sacred Sites maintained by the Aboriginal Areas Protection Authority (**Authority**) under the *Northern Territory Aboriginal Sacred Sites Act* 1989 (NT) (**Sacred Sites Act**) on 21 June 2017. The details of the Sacred Sites are set out in Part II of the attached Schedule.

Opinions

5. As a result of the searches and enquiries, but subject to the assumptions and qualifications set out in this Report, we are of the view that, as at the date of the relevant Searches, this Report provides an accurate statement as to:

(a) (**Company's Interest**): the Company's interest in the Tenements;

(b) (**Good Standing**): the validity and good standing of the Tenements; and

(c) (**Third party interests**): third party interests, including encumbrances, in relation to the Tenements.

Description of the Tenements

6. The Tenements comprise three Exploration Licences granted under the Mining Act. Part I of the Schedule provides a list of the Tenements. The following provides a description of the nature and key terms of these types of mining tenements as set out in the Mining Act and potential successor tenements.

Exploration Licence

7. **Application**: In accordance with the Mining Act, an application for a mineral exploration licence (or "EL") must be made to the Minister in the approved form. An application must include a description of the blocks comprising the proposed title area of the exploration licence and a technical work program (which includes the proposed expenditure for carrying out technical work) for the first two operational years of the exploration licence.

8. **Rights**: The holder of a mineral exploration licence has the right to occupy the land and conduct exploration for minerals on the land.

9. The following activities may be conducted by the title holder on an exploration licence:

(a) digging pits, trenches and holes and sinking bores and tunnels, in the title area;

(b) activities for ascertaining the quality, quantity or extent of ore or other material in the title area by drilling or other methods; and

(c) the extraction and removal of samples of ore and other substances in amounts reasonably necessary for the evaluation of the potential for mining in the area.

10. Larger samples of ore may be removed with the authorisation of the Minister.

11. **Area**: The title area of an exploration licence may comprise a minimum of 4 adjoining blocks and a maximum of 250 blocks. The Minister may grant an exploration licence with a title area smaller than 4 adjoining blocks if there are circumstances that justify the smaller area.

12. **Compulsory surrender**: Unless the Minister decides otherwise, the title area of an exploration licence must be reduced at the end of each period of 2 operational years. "Operational Year" is defined in the Mining Act to mean the period of 12 months immediately after the title comes into force and each subsequent period of 12 months. This includes the last operational year if the title holder applies for a renewal of the exploration licence.

13. The Minister has broad discretion to decide, on his own initiative or on application of the title holder, that a reduction is not required, the size of the reduction and to defer the timing of the reduction. However, if the title holder has failed to comply with the expenditure conditions of the licence, the Minister is not required to consider any such application made by the holder.

14. **Term**: The Minister may grant an exploration licence for a term not exceeding 6 years. Prior to the end of the term of an exploration licence, the title holder may apply to the Minister for the renewal of the exploration licence for all or some of the blocks in the title area. The Minister may renew the exploration licence for a term not exceeding 2 years but the exploration licence may be renewed more than once.

15. **Retention Status**: The holder of an exploration licence may apply to the Minister to have the exploration licence, or part of the exploration licence, designated as an exploration licence in retention (**ELR**). The application may only be made where there is an ore body or anomalous zone of possible economic potential in the title area and mining is not currently commercially viable or may be currently commercially viable but further work is required to assess its feasibility.

16. If an ELR is granted the area of the ELR will be excluded from the area of the exploration licence, unless the ELR is issued for all of the title area of the exploration licence in which case the ELR will replace the exploration licence.

17. The ELR may be issued for a term not exceeding 5 years and renewals may be sought for further periods of 5 years. The rights of the holder of an ELR include the right to occupy the title area and to continue conducting the activities authorised for an exploration licence.

18. An ELR gives the holder an exclusive right to apply for a mineral lease over all or part of the title area.

19. If the Minister is satisfied that the mining and processing of minerals on the ELR s are commercially viable, the Minister may issue a notice to the title holder requiring the title holder to either apply for a mineral lease over all or part of the area of the ELR or give reasons why the title holder has not so applied. The Minister may cancel the ELR if the title holder fails to provide reasons or apply for a mineral lease within the time specified in the notice or, if reasons are provided by the title holder, the Minister is satisfied that it is the interests of the Territory that the ELR should be cancelled.

20. **Conditions**: Exploration licences are granted subject to the following statutory conditions:

    (a) before conducting authorised activities on an exploration licence, the title holder must give notice to any landowners (which include, among others, holders of pastoral leases and native title holders) or occupiers of land in the title area;

    (b) the holder of an exploration licence must:

        (i) carry out exploration work in accordance with the technical work program and the expenditure requirements for the exploration licence;

        (ii) give notice to the Minister within 28 days of discovery of a mineral that may be of economic or commercial interest;

        (iii) notify the Minister and provide such samples and data as the Minister requires within 28 days of finding underground water during the conduct of authorised activities;

        (iv) provide the Minister with a technical work program for the authorised activities to be conducted on the title in the next operational year; and

    (c) the holder of an exploration licence must not:

        (i) extract or remove ore, except for sampling purposes or as otherwise authorised by the Minister; and

        (ii) sell a mineral discovered in the title area, unless the sale has been approved by the Minister.

21. **Priority to apply for mineral lease**: The holder of an exploration licence has an exclusive right to apply for a mineral lease for all or part of the title area.

22. **Amalgamation:** The Minister may decide to amalgamate all or part of 2 or more adjoining title areas if the exploration licences are held by the same person and authorise the same activities. An amalgamation may be done on the Minister's own initiative (after consulting with the title holder) or on application by the holder of the original titles. The effect of an amalgamation is that the original titles are cancelled and a new exploration licence issued in replacement.

23. **Transfer**: The holder of a mineral title (which includes an exploration licence) may apply to the Minister for approval and registration of transfer a legal or equitable interest in the title.

24. **Cancellation**: The Minister may cancel an exploration licence if the holder: has contravened a condition of the mineral title, has failed to pay an amount due to the Territory under the Mining Act, has not used good work practices in conducting its authorised activities, no longer has the financial resources to carry out the work program or has not conducted authorised activities on the title area for a continuous period of 2 years.

Mineral Lease

25. **Applications**: A person may apply in accordance with the Mining Act to the Minister for the grant of a mineral lease, however a holder of an exploration licence or retention licence over the relevant area has priority.

26. An application for a mineral lease must include a description of the land comprising the proposed area of the mineral lease, evidence of an ore body or anomalous zone of likely economic value in the proposed area of the mineral lease (unless the mineral lease is granted for purposes ancillary to a mining operation being carried out by the title holder on another mineral lease) and a summary of the work proposed to be carried out on the mineral lease.

27. **Rights**: A mineral lease gives the holder the exclusive right to, among other things, mine, process and remove minerals from the area of the lease. A mineral lease may also be granted for the purpose of conducting activities ancillary to mining conducted on another mineral lease granted to the title holder. The holder has exclusive rights to occupy the land comprised of the mineral lease.

28. **Term**: The Minister may grant a mineral lease for the term the Minister considers appropriate. The mineral lease may be renewed more than once for a term the Minister considers appropriate.

29. **Conditions**: The title holder is required to comply with all contractual arrangements entered into with the Territory and to conduct activities in relation to the area of the mineral lease in a way that interferes as little as possible with the rights of other occupiers of land in the vicinity of the lease area.

30. **Transfer**: The holder of a mineral title (which includes a mineral lease) may apply to the Minister for approval and registration of transfer a legal or equitable interest in the title.

Aboriginal Heritage

31. The Company must ensure that it does not breach any applicable legislation relating to Aboriginal heritage (see below).

32. A Tenement may contain sites or objects of Aboriginal significance. In the Northern Territory, these sites are recorded in a Register of Sacred Sites maintained in accordance with the Sacred Sites Act, however this is not an exhaustive list and the Sacred Sites Act protects both sites recorded on the Register and sites which are not yet recorded. In order to comply with the Sacred Sites Act, an application must be made to the Aboriginal Areas Protection Authority (Authority) for an Abstract of Records for the area on which work is proposed. While the Authority highly recommends that an Authority Certificate be applied for before ground disturbing works are commenced, we understand that this is not the industry practice in the Northern Territory. Instead, where the Abstract of Records identifies any sacred sites in the area, steps are taken by the tenement holder to avoid these sites. Where sites can no longer be avoided, a company may then wish to apply to the Authority for an Authority Certificate before commencement of ground disturbing works on the sensitive area. On receipt of an application for an Authority Certificate, the Authority will consult with custodians and provide written advice specifying the constraints to a particular activity due to the existence of sacred sites. The Authority Certificate will set out the conditions (if any) on which the proposed work may be carried out. Provided that the holder of an Authority Certificate complies with its conditions, the holder is indemnified against prosecution under the offence provisions of the Sacred Sites Act.

Commonwealth Legislation

33. The *Aboriginal and Torres Strait Islander Heritage Act* 1984 (Cth) (**Commonwealth Heritage Act**) is aimed at the preservation and protection of any Aboriginals and objects that may be located on the Tenements.

34. Under the Commonwealth Heritage Act, the Minister for Aboriginal Affairs may make interim or permanent declarations of preservation in relation to significant Aboriginal areas or objects, which have the potential to halt exploration activities. Compensation is payable by the Minister for Aboriginal Affairs to a person who is, or is likely to be, affected by a permanent declaration of preservation.

35. It is an offence to contravene a declaration made under the Commonwealth Heritage Act.

Northern Territory Legislation

36. Sacred sites in the Northern Territory are protected by the Sacred Sites Act.

37. Under the Sacred Sites Act it is an offence for a person to enter or remain on a sacred site or to carry out work on or use a sacred site. "Sacred site" has the definition given to it in the *Aboriginal Land Rights (Northern Territory) Act* 1976 (NT) which is "a site that is sacred to Aboriginals or is otherwise of significance according to Aboriginal tradition, and includes any land that, under a law of the Northern Territory, is declared to be sacred to Aboriginals or of significance according to Aboriginal tradition."

38. A person who proposes to use or carry out work on land must apply to the Authority for an Abstract of Records for the area on which operations are proposed. The Abstract of Records identifies both registered and recorded sacred sites on the tenements. Registered sacred sites are those that Aboriginal custodians have asked the Authority to protect and that have subsequently been documented and evaluated by the Authority and entered on the Register of Sacred Sites. Recorded sacred sites have not been evaluated or placed on the Register of Sacred Sites but there is information indicating that they are nonetheless significant according to Aboriginal tradition and therefore "sacred sites" within the meaning of the Sacred Sites Act.

39. If the area of proposed operations is proximate to one of the recorded or registered sites described on the Abstract of Records, and steps cannot be taken to avoid these sites, a tenement holder may elect to apply for an Authority Certificate from the Authority. Once an application has been received the Authority is required to consult with the custodians of sacred sites on or in the vicinity of the land to which the application relates that are likely to be affected by the proposed works. The applicant for an Authority Certificate may also request the Authority to arrange a conference between the applicant and the custodians of the sacred sites.

40. The Authority is required to issue an Authority Certificate to the applicant if the Authority is satisfied that the work or use of the land proposed by the applicant could proceed without there being a substantive risk of damage to or interference with a sacred site on the vicinity of the land or an agreement has been reached between the custodians of the sacred site and the applicant.

41. An Authority Certificate will:

    (a) describe the part or parts of the land on which the work proposed may be carried out (or not carried out, as the case may be) with sufficient particularity to enable the land and part or parts to be identified; and

    (b) setting out the conditions, if any, on which the work may be carried out.

42. The holder of an Authority Certificate will be indemnified against prosecution under the offence provisions of the Sacred Sites Act, provided that the holder has complied with the conditions of the certificate.

Native Title

Introduction

43. On 3 June 1992 the High Court of Australia held in *Mabo v Queensland (No 2)* (1992) 175 CLR 1 (**Mabo No 2**) that the common law of Australia recognises native title. The High Court held that in order to maintain a native title claim the persons making such claim must show that they enjoyed certain customary rights and privileges in respect of a particular area of land and that they have maintained their traditional connection with that land.

44. Such a claim will not be recognised if the native title has been extinguished, either by voluntary surrender to the Crown, death of the last survivor of a community entitled to native title, abandonment of the land in question by that community or the granting of an "inconsistent interest" in the land by the Crown. An example of inconsistent interest would be the granting of a freehold or some types of leasehold interest in the land. The granting of a lesser form of interest will not extinguish native title unless it is wholly inconsistent with native title.

45. In order for native title to be recognised the following conditions must be met:

(a) the rights and interests are possessed under the traditional laws that are currently acknowledged and the traditional customs are currently observed by the relevant Indigenous people;

(b) those Indigenous people have a 'connection' with the area in question by those traditional laws and customs; and

(c) the rights and interests are recognised by the common law of Australia.

46. The *Racial Discrimination Act 1975* (Cth) (**RDA**), which was enacted by the Federal Parliament, is binding on the State of Western Australia and makes racial discrimination unlawful. Some legal commentators have raised the question of whether, in the case of the grant of a post 1975 mining tenement, if such grant is found to be discriminatory and therefore unlawful under the RDA, the result may be either that the grant of the mining tenement is invalid, or that such grant would give rise to a claim for compensation by the affected Aboriginal group against the Commonwealth.

47. The Commonwealth Parliament responded to the Mabo decision by passing the *Commonwealth Native Title Act 1993* (**NTA**).

The Native Title Act 1993

48. The NTA provides for:

(a) the establishment of the NNTT where Indigenous people may lodge claims for native title rights over land and have those claims registered;

(b) the Courts to assess native title claims and determine if native title rights exist and where a Court completes the assessment of a native title claim, to issue a native title determination that specifies whether or not native title rights exist; and

(c) that an act (such as the grant or renewal of a mining tenement) carried out after 23 December 1996 (a **Future Act**) must comply with certain requirements for the Future Act to be valid under the NTA. These requirements are called the **Future Act Provisions**.

The Future Act Provisions

49. The Future Act Provisions vary depending on the Future Act to be carried out. We note that the grant of a tenement does not need to comply with Future Act Provisions if in fact native title has never existed over the land covered by the tenement, or has been validly extinguished prior to the grant of the tenement.

50. Unless it is clear that native title does not exist (for example in relation to freehold land), the usual practice of the State is to comply with the Future Act Provisions when granting a tenement. This ensures the grant will be valid in the event a court determines that native title rights do exist over the land subject to the tenement, and as such, the Future Act Provisions apply.

51. The Future Act Provisions vary depending on the Future Act to be carried out. In the case of the grant of a mining tenement, typically there are three alternatives:

(a) the Right to Negotiate;

(b) an Indigenous Land Use Agreement (**ILUA**); and

(c) the Expedited Procedure.

These are summarised below.

Right to Negotiate

52. The Right to Negotiate (**RTN**) involves a formal negotiation between the State, the applicant for the tenement and any registered native title claimants and holders of native title rights. The RTN objective is for the parties to negotiate in good faith and agree the terms on which the tenement can be granted. The applicant for the tenement is usually liable for any compensation that the parties agree to pay to the registered native title claimants and holders of native title. The parties may also agree on conditions that will apply to activities carried out on the tenement, for example, in relation to heritage surveys.

53. If an agreement is not reached, or not likely to be reached, after 6 months of the notification of the application to the native title party, the matter may be referred to the NNTT for determination on whether the tenement can be granted and if so, on what conditions. The NNTT has six months from the date of the application for determination to make a decision.

ILUA

54. An ILUA is a contractual arrangement governed by the NTA. Under the NTA, an ILUA must be negotiated with all registered native title claimants for a relevant area. The State and the applicant for the tenement are usually the other parties to the ILUA.

55. An ILUA must set out the terms on which a tenement can be granted. An ILUA will also specify conditions on which activities may be carried out within the tenement. The applicant for a tenement is usually liable for any compensation that the parties agree to pay to the registered native title claimants and holders of native title in return for the grant of the tenement being approved. These obligations pass to a transferee of the tenement.

56. Once an ILUA is agreed and registered, it binds the whole native title claimant group and all holders of native title in the area (including future claimants), even though they may not be parties to it.

Expedited Procedure

57. The NTA establishes a simplified, fast-track process for the carrying out of a Future Act that is likely to have minimal impact on native title rights (**Expedited Procedure**). The grant of a tenement can occur under the Expedited Procedure if:

    (a) the grant will not interfere directly with the carrying on of the community of social activities of the persons who are the holders of native title in relation to the land;

    (b) the grant is not likely to interfere with areas or sites of particular significance, in accordance with their traditions, to the persons who are holders of native title in relation to the land; and

    (c) the grant is not likely to involve major disturbance to any land or waters concerned or create rights whose exercise is likely to involve major disturbances to any land.

58. If the State considers the above criteria are satisfied, it commences the Expedited Procedure by giving notice of the proposed grant of the tenement in accordance with the NTA. Persons have until three months after the notification date to take steps to become a registered native title claimant or native title holder in relation to the land to be subject to the tenement.

59. If there is no objection lodged by a registered native title claimant or native title holder within four months of the notification date, the State may grant the tenement.

60. If one or more registered native title claimants or native title holders object within the four months of the notice period, the NNTT must determine whether the grant is an act attracting the Expedited Procedure. If the NNTT determines that the Expedited Procedure applies, the State may grant the tenement. Otherwise, the Further Act Provisions, such as the RTN or ILUA, must be followed before the tenements can be granted.

Registered Native Title Claims and Determinations

61. Our Searches indicate that the Tenements are subject to the following registered native title claims and determinations.

Tenement	Native Title Claim/s
EL30496	DCD2015/004, DCD2015/002
EL30590	DCD2015/002, DCD2015/003, DCD2015/009
EL31272	DCD2015/003

62. The status of the native title claims is summarised in Part II of the Schedule.

63. The native title claimants and holders of native title under the determinations are entitled to certain rights under the Future Act Provisions.

Validity of Tenements under the NTA

64. The sections below examine the validity of the Tenements under the NTA.

Tenements granted before 23 December 1996

65. Our Searches indicate that none of the Tenements were granted before 23 December 1996.

Tenements granted after 23 December 1996

66. Our Searches indicate that all of the Tenements were granted after 23 December 1996. Refer to Part I of the Schedule for the Tenements.

67. We have assumed that these Tenements were granted in accordance with the Future Act Provisions and as such are valid under the NTA.

Tenements renewed after 23 December 1996

68. Renewals of mining tenements made after 23 December 1996 must comply with the Future Act Provisions in order to be valid under the NTA.

69. An exception is where the renewal is the first renewal of a mining tenement that was validly granted before 23 December 1996 and the following criteria are satisfied:

    (a) the area to which the mining tenement applies is not extended;

    (b) the term of the renewed mining tenement is no longer than the term of the old mining tenement; and

    (c) the rights to be created are not greater than the rights conferred by the old mining tenement.

70. Any future renewals of the Tenements will need to comply with the Future Act Provisions in order to be valid under the NTA. The registered native title claimants and holders of native title identified in this Report will need to be involved as appropriate under the Future Acts Provisions.

Access Issues

Pastoral lease

71. The following pastoral leases underlie the Tenements.

Pastoral Lease	Tenement	Primary Interest Holder
Seven Emu Station	EL30496	Owned by Francis Thomas Shadforth and sublease to Australian Wildlife Conservancy expiring 29/6/2036.

Pungalina Station	EL30496, EL30590	Owned by the Australian Wildlife Conservancy
Wollogorang Station	EL30590, EL31272	Owned by Pardoo Beef Company Pty Ltd
Calvert Hills Station	EL30590	Owned by McMillan Pastoral Company Pty Ltd

72. The Mining Act requires, as a condition of each exploration licence, that the title holder follow the procedure set out in the *Mineral Titles Regulations* (NT) (**Regulations**) for giving notice to landowners before starting to conduct authorised activities under an exploration licence. "Landowners" is defined in the Mining Act to include, among other things, a person recorded in the land register as a person entitled to a lease from the Crown under the *Pastoral Land Act* 2011 (NT).

73. Under the Regulations, the title holder is required to give written notice of its intention to commence conducting authorised activities on the land at least 14 days before the proposed commencement. The notice must include the name and contact details of the title holder, the name and contact details of the person conducting the authorised activities, the nature of the exploration to be conducted, the intended start date and an estimate of the duration of the program, a map of the land on which the exploration is to be conducted and the details of the proposed place of entry onto the land.

74. After entering the land, the title holder is also required to take all reasonable steps to advise the occupiers of the land of its entry before it starts to conduct authorised activities.

75. The holder of a mineral title is not permitted to conduct authorised activities on pastoral land within:

    (a) 200m of a building that is not enclosed by a fence; or

    (b) 50m of a fence that encloses a building.

76. We are advised that, while the Company does not currently have any access and compensation agreements in place with the pastoral lessees in relation to the Tenements, it is currently in the process of negotiating a land access agreement with the Pardoo Beef Company Pty Ltd (the holder of Wollogorang Station which is the main area of exploration activity). While it is not a statutory requirement that access agreements be entered into, we recommend that the Company enter into such agreements to ensure the requirements of the Mining Act are satisfied and to avoid any future disputes arising in relation to amounts of compensation which may be applicable.

Other potential interests

77. We have identified that EL31272 and EL30590 overlie Exploration Permit 190 and EL30496 overlaps both Exploration Permit 174 and Exploration Permit 190.

78. Exploration Permits 174 and 190 are petroleum exploration permits granted under the *Petroleum Act* (NT) (**Petroleum Act**).

79. A petroleum exploration permit gives the holder the exclusive right to explore for but not produce petroleum in the title area. The permit allows the holder to carry out exploratory operations for oil and gas and operations to establish the nature and extent of any petroleum resource discovered, including the feasibility of production.

80. Titles granted under the Petroleum Act operate concurrently with titles granted under the Mining Act.

81. Section 81 of the Petroleum Act provides that the holder of a petroleum interest (which includes an exploration permit) must pay compensation to "any occupier of land comprised in the petroleum interest who has a registered interest in the land" for deprivation of use or enjoyment of the land, including improvements on the land and any damage caused by the permit holder to the land or improvements on the land.

82. Exploration activities may not be commenced under the Petroleum Act unless the permit holder has given notice to "any occupier of the land who has a registered interest in that land of the proposed date of commencement, nature and duration" of those exploration activities.

83. Petroleum is specifically excluded from the definition of "mineral" in the Mining Act and, as such, an exploration or mining permit granted under Mining Act will confer no rights to explore for or mine petroleum.

Material Agreements

84. **Share Sale Agreement for the purchase of Mangrove:** the Company, Coolabah Group Pty Ltd (**Vendor**) and Mangrove Resources Pty Ltd (**Mangrove**) are parties to a share sale agreement dated 16 June 2017 (**Share Sale Agreement**), pursuant to which the Vendor grants to the Company the option to acquire all of the issued capital, being one fully paid ordinary share, in Mangrove (**Mangrove Share**) (**Option**). Mangrove is the sole registered holder of EL30496, EL30590 and EL31272 (**Tenements**).

85. The Share Sale Agreement supersedes and replaces an earlier Heads of Agreement entered into by the Company, the Vendor and Mangrove on or about 31 March 2017.

86. The Share Sale Agreement provides that the Company may exercise the Option between the date of execution of the Heads of Agreement and 31 December 2017, or such later date as agreed between the parties (**Option Period**). Upon exercise of the Option, the Company and the Vendor agree to the sale and purchase of the Mangrove Share (**Acquisition**).

87. The consideration payable by the Company to the Vendor for the Acquisition comprises:

    (a) 6,500,000 fully paid ordinary shares (each, a **Share**) (which will be subject to applicable escrow conditions);

    (b) 10,000,000 Class A Performance Shares (which will be subject to applicable escrow conditions); and

    (c) 4,500,000 Class B Performance Shares (which will be subject to applicable escrow conditions),

    (**Consideration Shares**).

88. The Class A Performance Shares will convert into Shares upon the earlier of:

    (a) the announcement by the Company of the delineation of an Inferred or higher Mineral Resource in accordance with the 2012 edition of the JORC Code containing at least 6,000 tonnes Cobalt equivalent at a grade 0.12% Cobalt equivalent or greater; or

    (b) the Company selling or transferring for value of at least $5 million to a third party, 100% of the shares of Mangrove or 100% of the Company's legal or beneficial interest in the Tenements,

    both within five years of the date of issue.

89. The Class B Performance Shares will convert into Shares upon the earlier of:

    (a) the announcement by the Company of the delineation of an Inferred or higher Mineral Resource in accordance with the 2012 edition of the JORC Code containing at least 15,000 tonnes Cobalt equivalent at a grade 0.12% Cobalt equivalent or greater; or

    (b) the Company selling or transferring for value of at least $20 million to a third party, 100% of the shares of Mangrove or 100% of the Company's legal or beneficial interest in the Tenements,

    both within five years of the date of issue.

90. The Class A and Class B Performance Shares will immediately vest and convert into Shares on the occurrence of a "Change of Control Event", notwithstanding that the milestones described above have not been met. "Change of Control Event" is defined as either:

(a) a takeover bid in respect of the Company having received acceptances for more than 50.1% of the Company's shares and being declared unconditional by the bidder; or

(b) the shareholders of the Company voting in favour of a proposed scheme of arrangement at a Court convened meeting of shareholders, under which all of the shares of the Company are to be cancelled or transferred to a third party, and a Court granting orders approving that proposed scheme of arrangement.

91. The exercise of the Option is conditional upon and subject to the satisfaction of the following conditions on or before 31 December 2017:

(a) the Company obtaining a conditional admission letter from ASX on terms and conditions that are reasonably acceptable to the Company;

(b) the Company's receipt of ASX approval of the terms of the Performance Shares for the purposes of ASX Listing Rule 6.1;

(c) the parties obtaining all necessary consents and approvals (including shareholders' and regulatory or third party approvals) necessary to give effect to the sale and purchase of the Mangrove Share;

(d) the Company receiving valid applications for the minimum subscription under its prospectus;

(e) no breach of any Vendor warranty occurring before the earlier to occur of completion of the Acquisition (**Completion**) and 31 December 2017;

(f) no material adverse effect occurring with respect to Mangrove or the Tenements before the earlier to occur of Completion and 31 December 2017;

(g) the Vendor, or its nominees, entering into such form of restriction agreements in respect of the Consideration Shares as is required by ASX; and

(h) written confirmation in a form reasonably acceptable to the Company that the Vendor has forgiven the shareholder loan to Mangrove of $38,675.48.

92. During the Option Period, the Company agrees to maintain the Tenements and keep them in good standing and free from liability to forfeiture or non-renewal, meet all of the outgoings of the Tenements and observe and perform the conditions of the Tenements.

93. During the Option Period and until Completion, the Vendor and Mangrove have covenanted with the Company that they will not (without the prior written consent of the Company, which may not be unreasonably withheld) do anything that will affect the ownership of the Tenements and related technical information (together, **Mining Assets**) (including disposal of the Mining Assets or creating encumbrances over the Mining Assets). Mangrove additionally covenants that it will not enter into any material contract or incur any material liability, declare any dividends or vary its capital structure. In addition, the Vendor must disclose all correspondence, studies, and exploration results to the Company. The Vendor and Mangrove have also agreed to provide the Company with unrestricted access to the Mining Assets during the Option Period.

94. The Company has agreed to indemnify the Vendor and Mangrove against any claims connected with any negligence of the Company or its officers, agents or employees, or a breach by the Company (or its officers, agents or employees) of its obligations regarding keeping the Tenements in good standing. Further, in respect of the Option Period, the Company agrees to indemnify the Vendor and Mangrove from all claims caused by or connected with the Company's use of the Mining Assets, the presence of the Company on the Tenements and any personal injury or death occurring on the Tenements.

95. The Vendor and Mangrove give certain warranties to the Company, and the Company gives certain warranties to the Vendor, all of which are standard warranties for an agreement of this nature.

Qualifications and Assumptions

96. This Report is subject to the following qualifications and assumptions:

(a) This Report is accurate as at the date(s) the Searches that were performed.

(b) We have assumed the accuracy and completeness of all Tenement searches, register extracts and other information or responses which were obtained from the relevant department or authority including the NNTT.

(c) We assume that the registered holder of a Tenement has a valid legal title to the Tenement.

(d) This Report does not cover any third party interests, including encumbrances, in relation to the Tenements that are not apparent from the Searches and the information provided to us.

(e) With respect to the granting of the Tenements, we have assumed that the Territory and the applicant for the Tenements complied with the applicable Future Act Provisions.

(f) We have assumed the accuracy and completeness of any instructions or information which we have received from the Company or any of its officers, agents and representatives.

(g) Unless apparent from our Searches or the information provided to us, we have assumed compliance with the requirements necessary to maintain a Tenement in good standing.

(h) Reference in the Schedule to any area of land is taken from details shown on Searches obtained from the relevant department. It is not possible to verify the accuracy of those areas without conducting a survey.

(i) The information in the Schedule is accurate as at the date of the relevant Searches.

Yours faithfully

All Mining Legal Pty Ltd

PART I – TENEMENT SCHEDULE

No.	Tenement	Registered Holder	Application Date	Grant Date	Expiry Date	Area	Expenditure [12]	Registered Caveats and Encumbrances	Securities
1.	EL30496	Mangrove Resources Pty Ltd[3]	05/08/2014	28/05/2015	27/05/2021	112 Sub-Blocks[4]	The first year expenditure commitment was $28,500.00. This commitment was met with the tenement holder lodging a report claiming $66.620.88 in expenditure for year 1.[5] The second year expenditure commitment was $38,500.00. This commitment was met with the tenement holder lodging a report claiming	Nil.	Nil.

Note [1]: Under the Mining Act applicants for an exploration licence are required to submit a technical work program for the first 2 operational years of the exploration licence with their application. The technical work program includes details of the proposed expenditure for the first two years of that licence. The tenement holder is then required to lodge expenditure reports confirming those commitments have been met. After the first two years of the term, the tenement holder is then required to lodge technical work programs containing details of proposed expenditure on a yearly basis.

Note [2]: The three Tenements form part of a combined reporting group GR390. The Tenements are the only tenements in the group. The reporting year for GR390 is 10 April – 9 April each year with the expenditure reports and annual technical reports due for all of the tenements within 60 days of the end of the reporting year (i.e. on 9 June each year).

Note [3]: Mangrove Resources Pty Ltd is a wholly owned subsidiary of Coolabah Group Pty Ltd.

Note [4]: The exploration licence was originally applied for over an area of 221 sub-blocks but was varied on 23 April 2015 to surrender 109 sub-blocks. Under the Mining Act, the title area of an exploration licence must be reduced at the end of each period of 2 operational years of the licence, however, the tenement holder can apply for the surrender requirements to be waived, reduced or deferred (see s.29(4) Mining Act).

Note [5]: The amalgamated expenditure report was lodged by the tenement holder late on 15 June 2016. Late fees were incurred but these payments have been waived.

No.	Tenement	Registered Holder	Application Date	Grant Date	Expiry Date	Area	Expenditure [12]	Registered Caveats and Encumbrances	Securities
							$47,725.00 in expenditure for year 2. The third year expenditure commitment is $50,000.00. The tenement holder is not required to lodge an expenditure report for the third year of the term until 9 June 2018. Until the expenditure report has been lodged we are unable to confirm whether the expenditure condition has been met for the third year of the term.		
2.	EL30590	Mangrove Resources Pty Ltd	19/09/2014	28/05/2015	27/05/2021	107 Sub-blocks[6]	The first year expenditure commitment was $26,000.00. This commitment was met with the tenement holder lodging a report claiming $66.620.88 in expenditure for year 1.[7] The second year expenditure commitment	Nil.	Nil.

Note [6]: The exploration licence was originally applied for over an area of 228 sub-blocks but was varied on 23 April 2015 to surrender 121 sub-blocks.
Note [7]: The amalgamated expenditure report was lodged by the tenement holder late on 15 June 2016. Late fees were incurred but these payments have been waived.

No.	Tenement	Registered Holder	Application Date	Grant Date	Expiry Date	Area	Expenditure [12]	Registered Caveats and Encumbrances	Securities
							was $39,000.00. This commitment was met with the tenement holder lodging a report claiming $39,675.00 in expenditure for year 2. The third year expenditure commitment is $50,000.00. The tenement holder is not required to lodge an expenditure report for the third year of the term until 9 June 2018. Until the expenditure report has been lodged we are unable to confirm whether the expenditure condition has been met for the third year of the term.		
3.	EL31272	Mangrove Resources Pty Ltd	24/03/2016	09/04/2016	08/04/2022	125 Sub-blocks[8]	The first year expenditure commitment was $30,000.00. This commitment was met with the tenement holder lodging a report claiming $48,300.00 in expenditure for year 1	Nil.	Nil.

Note [8]: EL31272 was granted as an amalgamation of exploration licences 30458 and 30495.

No.	Tenement	Registered Holder	Application Date	Grant Date	Expiry Date	Area	Expenditure [12]	Registered Caveats and Encumbrances	Securities
							The second year expenditure commitment is 86,000.00. The tenement holder is not required to lodge an expenditure report for the second year of the term until 9 June 2018. Until the expenditure report has been lodged we are unable to confirm whether the expenditure condition has been met for the tenement.		

PART II – NATIVE TITLE CLAIMS AND ABORIGINAL HERITAGE

Native Title Claims

Tenement Number	Federal Court Number	Application Name	Registered	Status
EL30496	NTD32/2013	Seven Emu Pastoral Lease	Yes	Determined – Native Title exists in parts of the determination area
EL30496 and EL30590	NTD23/2013	Pungalina Pastoral Lease	Yes	Determined – Native title exists in parts of the determination area

EL30590 and EL31272	NTD25/2013	Wollogorang Pastoral Lease	Yes	Determined – Native title exists in parts of the determination area
EL30590	NTD25/2014	Calvert Hills Pastoral Lease	Yes	Determined – Native title exists in parts of the determination area

Aboriginal Heritage Information

Tenement	Registered Sacred Sites[9]	Recorded Sites[10]
EL30496	No Registered Aboriginal Sites in Mining Tenement	4 Recorded Sites[11]
EL30590	No Registered Aboriginal Sites in Mining Tenement	3 Recorded Sites[12]
EL31272	No Registered Aboriginal Sites in Mining Tenement	3 Recorded Sites

Note [9]: Registered sacred sites are those that Aboriginal custodians have asked the Aboriginal Areas Protection Authority (**Authority**) to protect and that have subsequently been documented and evaluated by the Authority and entered on the Register of Sacred Sites maintained by the Authority in accordance with the *Northern Territory Aboriginal Sacred Sites Act* 1989 (NT).

Note [10]: Recorded sacred sites have not been evaluated or placed on the Register of Sacred Sites but there is information indicating that they are nonetheless significant according to Aboriginal tradition and therefore "sacred sites" within the meaning of the *Northern Territory Aboriginal Sacred Sites Act* 1989 (NT).

Note [11]: One of these recorded sites (waterholes at Sandy Creek) lies at the boundary of EL30496 and EL30590 and has been included against both exploration licences in this table.

Note [12] : One of these recorded sites (waterholes at Sandy Creek) lies at the boundary of EL30496 and EL30590 and has been included against both exploration licences in this table.

Pendragon Capital Ltd

ABN 17 008 963 755

Australian Financial Services Licence Number 237 549

30 June 2017

The Directors
Northern Cobalt Limited
Level 3
29 King William Street
ADELAIDE SA 5000

Dear Sirs

Investigating Accountant's Report – Northern Cobalt Limited

1. Introduction

This Investigating Accountant's Report ("Report") has been prepared at the request of the directors of Northern Cobalt Limited ACN 617 789 732 ("Northern Cobalt" or "the Company"). The Report has been prepared based on the historical financial information of the Company for inclusion in a Prospectus dated on or around 30 June 2017 inviting participation in the issue of 25,000,000 ordinary shares at an issue price of 20 cents per share to raise $5,000,000 ("Minimum Subscription"). The Company has the right to accept oversubscriptions of up to a further 5,000,000 ordinary shares at an issue price of 20 cents per share to raise up to a further $1,000,000. The maximum amount which may be raised under the Offer is $6,000,000 ("Maximum Subscription"). For every 2 ordinary shares subscribed for and issued there will be 1 free Investor Option exercisable at $0.20 on or before the date which is 24 months from the date of issue.

All amounts are expressed in Australian Dollars unless otherwise stated. Unless otherwise stated, terms have the same meaning as in the Prospectus.

2. Background

The Company was incorporated as a proprietary company limited by shares on 6 March 2017. The focus of the Company will be on mineral exploration of resource opportunities.

On 4 May 2017, the Company converted to a public company limited by shares.

On or about 31 March 2017, the Company entered into a binding heads of agreement with Coolabah Group Pty Ltd ACN 166 770 896 ("Coolabah" or "Vendor") and Mangrove Resources Pty Ltd ACN 612 043 240 ("Mangrove") and paid a non refundable option fee of $28,000.

On 16 June 2017, the Company entered into an option and share sale agreement with Coolabah and Mangrove pursuant to which, subject to satisfaction (or waiver) of certain conditions precedent, the Company will acquire 100% of the issued shares of Mangrove ("Share Sale Agreement"). Mangrove is the sole holder of the tenements being Northern Territory Exploration Licences 30496, 30590 and 31272 and any Mineral Lease granted on an area contained within those tenements or any Exploration Licence or other tenement granted in substitution for any of those tenements or any part of them ("Tenements").

A summary of the Share Sale Agreement is set out in Section 8.1 of the Prospectus.

Information on the Northern Cobalt activities can also be found in this Prospectus.

In consideration for the 100% acquisition of Mangrove, Northern Cobalt will issue to Coolabah:

Share category	**Number of Shares**
Ordinary Shares	6,500,000
Performance Shares	
Class A Performance Shares	10,000,000
Class B Performance Shares	4,500,000
	14,500,000

3. Capital Structure

The expected capital structure of the Company following the completion of the capital raising is as follows:

	Minimum Subscription	**Maximum Subscription**
Shares		
Existing shares in Northern Cobalt prior to lodgement of the Prospectus	11,000,000	11,000,000
Issued as consideration for acquisition of 100% of Mangrove's issued capital	6,500,000	6,500,000
Shares pursuant to this Offer – issued at $0.20	25,000,000	30,000,000
Total shares	**42,500,000**	**47,500,000**
Options		
Founder Options on issue before the Offer[1]	6,000,000	6,000,000
Investor Options to be issued pursuant to the Offer	12,500,000	15,000,000
Promoter Options to be issued outside the Offer[2]	6,500,000	6,500,000
Total Options	**25,000,000**	**27,500,000**

	Minimum Subscription	Maximum Subscription
Performance Shares		
Performance Shares	-	-
Class A Performance Shares to be issued outside the Offer[3]	12,000,000	12,000,000
Class B Performance Shares to be issued outside the Offer[4]	5,500,000	5,500,000
Total performance shares	**17,500,000**	**17,500,000**

Note 1: Founder Options

The Company has issued 6,000,000 options to the vendors and founders ("Founder Options"). The Founder Options have the following conditions:

- Exercise price of $0.25 each
- The Founder Options will expire on 21 March 2021 which is four years after their date of issue.

Note 2: Promoter Options

The Company has agreed to issue 6,500,000 options to the Lead Manager or its nominees ("Promoter Options"). The Promoter Options have the following conditions:

- Exercise price of $0.25 each
- The Promoter Options will expire on the date which is four years after their date of issue.

Note 3: Class A Performance Shares

The Company has agreed to issue 10,000,000 Class A Performance Shares to the Vendor and its related parties pursuant to the Share Sale Agreement and 2,000,000 Class A Performance Shares to the Lead Manager or its nominees pursuant to the Lead Manager Mandate. Each Class A Performance Share will convert into one Share upon the earlier of:

- The Company announcing to ASX the delineation of an Inferred (or higher category) Mineral Resource in accordance with the JORC Code containing at least 6,000 tonnes Cobalt equivalent, at a grade of 0.12% Cobalt equivalent or greater (reported in accordance with clause 50 of the JORC code), on the Tenements; or
- The Company selling or transferring (directly or indirectly) for value of at least $5 million to a third party (being any person or entity other than a wholly-owned subsidiary of the Company) 100% of the shares of Mangrove, or 100% of the Company's legal or beneficial interests in the Tenements.
- The Class A milestones must be determined to have been achieved within 5 years of Completion.

Note 4: Class B Performance Shares

The Company has agreed to issue 4,500,000 Class B Performance Shares to the Vendor and its related parties pursuant to the Share Sale Agreement and 1,000,000 Class B Performance Shares to the Lead Manager or its nominees pursuant to the Lead Manager Mandate. Each Class B Performance Share will convert into one Share upon either:

- The Company announcing to ASX the delineation of an Inferred (or higher category) Mineral Resource in accordance with the JORC Code containing at least 15,000 tonnes Cobalt equivalent, at a grade of

0.12% Cobalt equivalent or greater (reported in accordance with clause 50 of the JORC code), on the Tenements; or

- The Company selling or transferring (directly or indirectly) for value of at least $20 million to a third party (being any person or entity other than a wholly-owned subsidiary of the Company) 100% of the shares of Mangrove, or 100% of the Company's legal or beneficial interests in the Tenements.
- The Class B milestones must be determined to have been achieved within 5 years of Completion.

4. Basis of Preparation

This Report has been included in this Prospectus to provide investors and their financial advisors with information on the pro forma financial statements of Northern Cobalt as set out in Appendix 1. The pro forma financial information is presented in a summarised form and does not reflect all the disclosure requirements of financial statements prepared using Australian Accounting Standards in accordance with the Corporations Act 2001. This report does not address the rights attaching to the shares to be issued in accordance with the Prospectus, nor the risks associated with the investment. Pendragon Capital Limited ("Pendragon") has not been engaged to report on the prospects of Northern Cobalt, the pricing of shares or the benefits and risks of becoming a shareholder in the Company. Risk factors are set out in Section 5 of the Prospectus. Pendragon bears no responsibility for those matters or for any matter or omission in the Prospectus, other than responsibility for this Report.

5. Scope

Pendragon has been requested to prepare a report covering the following financial information:

- Pro forma Unaudited Statement of Financial Position;
- Pro forma Unaudited Statement of Changes in Equity; and
- Notes to and forming part of the pro forma financial statements.

The pro forma unaudited financial information has been derived from historical financial information as at 31 March 2017 after adjusting for the following transactions as if they had occurred at the date of acquisition:

- the consolidation of Northern Cobalt and Mangrove historical financial information;
- the issue of a minimum of 25,000,000 fully paid ordinary shares at an issue price of $0.20 each to raise $5,000,000, with the right to oversubscription of up to a further 5,000,000 full paid ordinary shares to raise an additional $1,000,000;
- the issue of 6,500,000 ordinary shares to Coolabah in consideration for the acquisition of 100% of the issued shares of Mangrove;
- the issue of 6,500,000 Promoter Options which the Directors have valued at $740,464 using the Black Scholes method; and
- payment of estimated costs of the Offer of $566,355 for the Minimum Subscription and $631,355 for the Maximum Subscription.

The financial information for Northern Cobalt is set out in Appendix 1 to this Report.

6. Review

Pendragon has conducted an independent review of the financial information listed above as set out in Appendix 1 to this Report. The review has been conducted in accordance with auditing and assurance standard ASAE 3450 "Assurance engagement involving corporate fundraisings and/or prospective financial information".
Our review was limited primarily to the following procedures performed as our professional judgement considered reasonable in the circumstances:

- review of the audited financial report for Northern Cobalt for the period ended 31 March 2017;
- review of the audited financial report for Mangrove for the period ended 31 March 2017;
- review of the draft Prospectus;

- comparison of consistency in application of accounting standards and policies adopted by the Company; and

- enquiry of Company officeholders and other relevant employees or consultants.

These procedures do not provide all the evidence that would be required in an audit and, therefore, the level of assurance provided is less than that given in an audit. As we have not performed any audit activity, we do not express an audit opinion.

The Directors of Northern Cobalt are responsible for the preparation and presentation of financial information that has formed the basis of our review.

Pendragon disclaims any responsibility for any reliance on this Report or the financial information on which it is based for any purpose other than for which it was prepared.

7. Review Statement

Based on our review, which was not an audit, nothing has come to our attention which causes us to believe that the historical and pro forma financial information set out in Appendix 1 is not presented fairly, in accordance with the measurement and recognition requirements (but not the disclosure requirements) of applicable Accounting Standards and other mandatory professional reporting requirements in Australia and the accounting policies adopted by Northern Cobalt as disclosed in Note 1 of Appendix 1.

8. Subsequent Events

To the best of our knowledge and belief, there have been no other material items, transactions or events outside the Company's ordinary business subsequent to 31 March 2017 that require comment or adjustment to our Report or that would cause such information to be misleading or deceptive.

9. Declarations and Disclosures

i) Pendragon is the holder of an Australian Financial Services Licence (number 237 549).

ii) Pendragon will be paid a fee based upon normal charge out rates for professional time incurred in the preparation and compilation of this Report.

iii) Pendragon has not been involved in any other aspect of the preparation of the Prospectus. Pendragon has issued its consent to include this Report in the Prospectus.

iv) This Report has been prepared to provide general advice to investors only and does not take into account the specific financial needs, objectives and situation of individual investors. The giving of consent to include this Report in the Prospectus should not be taken as an endorsement by Pendragon of Northern Cobalt or the Offer.

v) The Financial Services Guide from Pendragon is available to investors upon request.

Yours sincerely

Rick Hopkins
Director

APPENDIX 1 NORTHERN COBALT LIMITED
STATEMENT OF FINANCIAL POSITION

		Northern Cobalt	Mangrove	Minimum Subscription	Maximum Subscription
		Audited 31 March 2017	Audited 31 March 2017	Pro Forma Unaudited (Note 1i)	Pro Forma Unaudited (Note 1i)
		$	$	$	$
Current Assets					
Cash and cash equivalents	2	603,490	1	5,009,136	5,944,136
Other assets and receivables	3	26,259	544	3,739	3,739
Total Current Assets		629,749	545	5,012,875	5,947,875
Non-Current Assets					
Financial asset	4	28,000	-	-	-
Property, plant and equipment		1,272	-	1,272	1,272
Tenement and exploration expenditure	5	-	-	1,327,455	1,327,455
Total Non-Current Assets		29,272	-	1,328,727	1,328,727
Total Assets		659,021	545	6,341,602	7,276,602
Current Liabilities					
Trade and other payables	6	59,014	38,675	7,950	7,950
Total Current Liabilities		59,014	38,675	7,950	7,950
Total Liabilities		59,014	38,675	7,950	7,950
Net Assets		600,007	(38,130)	6,333,652	7,268,652
Equity					
Issued capital	7	605,356	1	5,752,242	6,683,941
Reserves	8	4,447	-	744,911	744,911
Retained profits	9	(9,796)	(38,131)	(163,501)	(160,200)
Total Equity		600,007	(38,130)	6,333,652	7,268,652

The Statement of Financial Position is to be read in conjunction with the notes set out in this section.

APPENDIX 1 NORTHERN COBALT LIMITED
STATEMENT OF CHANGES IN EQUITY

(a) Minimum Subscription	Northern Cobalt Audited 31 March 2017 $	Mangrove Audited 31 March 2017 $	Minimum Subscription Pro-forma adjustments (Note 1i) $	Minimum Subscription Pro forma after issue (Note 1i) $
Balance at 1 July 2016	**-**	**(37,295)**	**-**	**(37,295)**
Profit/(loss) attributable to members of the Company	(9,796)	(835)	(115,574)	(126,205)
Other comprehensive income	-	-	-	-
Total comprehensive income/(loss) for the period	**(9,796)**	**(835)**	**(115,574)**	**(126,205)**
Issue Shares				
Movement in reserves	4,447	-	740,464	744,911
Transactions with equity holders in their capacity as equity holders (note 7(b))	605,356	-	5,146,885	5,752,241
Balance	**600,007[1]**	**(38,130)[1]**	**5,771,775**	**6,333,652**

(b) Maximum Subscription	Northern Cobalt Audited 31 March 2017 $	Mangrove Audited 31 March 2017 $	Minimum Subscription Pro-forma adjustments (Note 1i) $	Minimum Subscription Pro forma after issue (Note 1i) $
Balance at 1 July 2016	**-**	**(37,295)**	**-**	**(37,295)**
Profit/(loss) attributable to members of the Company	(9,796)	(835)	(112,273)	(122,904)
Other comprehensive income	-	-	-	-
Total comprehensive income/(loss) for the period	**(9,796)**	**(835)**	**(112,273)**	**(122,904)**
Issue Shares				
Movement in reserves	4,447	-	740,464	744,911
Transactions with equity holders in their capacity as equity holders (note 7(b))	605,356	-	6,078,584	6,683,940
Balance	**600,007[1]**	**(38,130)[1]**	**6,706,775**	**7,268,652**

[1] Balance as at 31 March 2017.

The Statement of Changes in Equity is to be read in conjunction with the notes set out in this section.

APPENDIX 1 NORTHERN COBALT LIMITED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The significant policies which have been adopted in the preparation of the historical and pro forma historical financial information (collectively referred to as the "financial statements") are:

a) Basis of preparation

The financial statements are a special purpose financial report which has been prepared in accordance with the recognition and measurement principles prescribed in Australian Accounting Standards, Urgent Issues Group Consensus Views, other authoritative pronouncements of the Australian Standards Board and the Corporations Act 2001.

They have been prepared on the basis of historical costs and do not take into account changing money values, or except when stated, current valuations of non-current assets.

The accounting policies have been consistently applied by the Company unless otherwise stated.

b) Income tax

Income tax on the profit or loss for the year comprises current and deferred tax. Income tax is recognised in the income statement except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the balance sheet date, and any adjustment to tax payable in respect of previous years.

Deferred tax is provided using the balance sheet liability method, providing for temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The following temporary differences are not provided for: initial recognition of goodwill, initial recognition of assets or liabilities that affect neither accounting nor taxable profit, and differences relating to investments in subsidiaries to the extent that they will probably not reverse in the foreseeable future. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantively enacted at the balance sheet date.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the asset can be utilised. Deferred tax assets are reduced to the extent that it is no longer probable that the related tax benefit will be realised.

c) Payables

Trade payables and other accounts payables are recognised when the entity becomes obliged to make future payments resulting from the purchase of goods and services.

d) Receivables

Receivables are carried at amounts due. The collectability of debts is assessed throughout the year and a specific provision is made for any doubtful accounts.

APPENDIX 1 NORTHERN COBALT LIMITED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

e) Goods and services tax

Revenues, expenses and assets are recognised net of the amount of goods and services tax ("GST"), except where the amount of GST incurred is not recoverable from the Australian Tax Office ("ATO"). In these circumstances the GST is recognised as part of a cost of acquisition of the asset or as part of an item of the expense.

Receivables and payables are stated with the amount of GST included.

The net amount of GST recoverable from, or payable to, the ATO is included as a current asset or liability in the statement of financial position.

Cash flows are included in the statement of cash flows on a gross basis. The GST components of cash flows arising from investing and financing activities, that are recoverable from, or payable to, the ATO, are classified as operating cash flows.

f) Recoverable amount of non-current assets

The carrying amounts of all non-current assets other than exploration expenditure are reviewed at least annually to determine whether they are in excess of their recoverable amount. If the carrying amount of a non-current asset exceeds the recoverable amount, the asset is written down to the lower value. In assessing recoverable amounts the relevant cash flows have not been discounted to their present value.

g) Acquisition of assets

Assets acquired, other than goodwill, are initially recorded at their costs of acquisition at the date of acquisition, being the fair value of the consideration provided plus the incidental costs directly attributed to the acquisition. When equity instruments comprising share and options are issued as consideration, their market price at the date of acquisition is used to determine a fair value except when the notional price at which they could be placed in the market is a better indication of fair value. Transaction costs arising on the issue of equity instruments are recognised directly in equity subject to the extent of proceeds received unless otherwise expensed.

h) Determination of fair values

A number of the Company's accounting policies and disclosures require the determination of fair value for both financial and non-financial assets and liabilities. Fair values for the business combination have been determined for measurement and/or disclosure purposes based on Note 1i. Valuation techniques are applied to determine the fair value for all unlisted securities, including arm's length transactions, reference to similar instruments and option pricing models.

APPENDIX 1 NORTHERN COBALT LIMITED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

NOTE 1 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONT'D)

i) Business combination

On 16 June 2017, Northern Cobalt Limited entered into a Share Sale Agreement to acquire 100% of the issued share capital of Mangrove Resources Pty Limited. Under the principles of AASB 3 Business Combinations, Northern Cobalt Limited is the accounting acquirer in the business combination. Under the principles of AASB 3 Business Combinations, when an entity acquires a group of assets or net assets that does not constitute a business, it shall allocate the cost of the group between the individual identifiable assets and liabilities in the group based on their relative fair value at the date of the acquisition. As Mangrove Resources Pty Limited is not carrying on a business the acquisition will be accounted for as an asset acquisition and the purchase consideration will be allocated to the individual identifiable assets and liabilities based on their relative fair value.

Purchase consideration

The share price used to determine the consideration for the purchase of Mangrove Resources Pty Limited ($0.20) is the offer price of Northern Cobalt Limited shares disclosed in the Prospectus dated on or about 30 June 2017.

	Shares	Price	Consideration
Issue of shares pursuant to Share Sale Agreement	6,500,000	$0.20	$1,300,000
Total	6,500,000	$0.20	$1,300,000

	Northern Cobalt	Mangrove	Minimum Subscription	Maximum Subscription
	Audited 31 March 2017 $	Audited 31 March 2017 $	Unaudited Pro Forma $	Unaudited Pro Forma $
NOTE 2 – CASH AND CASH EQUIVALENTS				
Balance pre-acquisition	603,490	1	603,491	603,491
Proceeds from the issue of 25,000,000 shares at $0.20			5,000,000	5,000,000
Proceeds from the issue of 5,000,000 shares at $0.20 for oversubscriptions			-	1,000,000
Payment of estimated capital raising costs			(566,355)	(631,355)
Payment of option fee			(28,000)	(28,000)
Unaudited pro forma cash balance			5,009,136	5,944,136

APPENDIX 1 NORTHERN COBALT LIMITED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

	Northern Cobalt	Mangrove	Minimum Subscription	Maximum Subscription
	Audited 31 March 2017 $	Audited 31 March 2017 $	Unaudited Pro Forma $	Unaudited Pro Forma $
NOTE 3 – OTHER ASSETS AND RECEIVABLES				
Balance pre-acquisition	26,259	544	26,803	26,803
Re-allocation of prepaid IPO expenses to equity			(23,064)	(23,064)
Unaudited pro forma financial asset balance			3,739	3,739
NOTE 4 – FINANCIAL ASSET				
Balance pre-acquisition	28,000	-	28,000	28,000
Option to acquire Mangrove exercised			(28,000)	(28,000)
Unaudited pro forma financial asset balance			-	-
NOTE 5 – TENEMENT AND EXPLORATION EXPENDITURE				
Balance pre-acquisition	-	-	-	-
Acquisition of 100% of Mangrove			1,327,455	1,327,455
Unaudited pro forma tenement and exploration expenditure			1,327,455	1,327,455
NOTE 6 – TRADE AND OTHER PAYABLES				
Balance pre-acquisition	59,014	38,675	97,689	97,689
Loan written off as part of Mangrove acquisition			(38,675)	(38,675)
Payment of option fee			(28,000)	(28,000)
Payment of IPO fees			(23,064)	(23,064)
Unaudited pro forma trade and other payables			7,950	7,950

APPENDIX 1 NORTHERN COBALT LIMITED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

	Northern Cobalt		Mangrove	Minimum Subscription	Maximum Subscription
	Audited 31 March 2017 $		Audited 31 March 2017 $	Unaudited Pro Forma $	Unaudited Pro Forma $
NOTE 7 – ISSUED CAPITAL (NET OF ISSUE COSTS)					
(a) Reconciliation of contributed equity					
Historical financial information:					
Balance pre-acquisition	605,356		1	605,357	605,357
Issued capital					
Purchase consideration for 100% of Mangrove				1,300,000	1,300,000
Capital raising				5,000,000	6,000,000
Capital raising costs				(412,650)	(480,951)
Expenses of offer – Promoter Options				(740,464)	(740,464)
Elimination of book value of Mangrove shares				(1)	(1)
Unaudited pro forma issued capital balance				5,752,242	6,683,941
(b) Transactions with equity holders in their capacity as equity holders					
Balance pre-acquisition	605,356		-	605,356	605,356
Issued capital					
Purchase consideration for 100% of Mangrove				1,300,000	1,300,000
Capital raising				5,000,000	6,000,000
Capital raising costs				(412,650)	(480,951)
Expenses of offer – Promoter Options				(740,464)	(740,464)
Elimination of book value Mangrove shares				(1)	(1)
Total				5,752,241	6,683,940
(c) Number of fully paid shares:					
Original number of fully paid shares in Northern Cobalt	11,000,000		-	11,000,000	11,000,000
Purchase consideration for 100% of Mangrove				6,500,000	6,500,000
Issued pursuant to Prospectus				25,000,000	30,000,000
Total				42,500,000	47,500,000

APPENDIX 1 NORTHERN COBALT LIMITED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

	Northern Cobalt	Mangrove	Minimum Subscription	Maximum Subscription
	Audited 31 March 2017 $	Audited 31 March 2017 $	Unaudited Pro Forma $	Unaudited Pro Forma $
NOTE 8 – OPTION RESERVE				
(a) Reconciliation of option reserve				
Balance pre-acquisition	4,447	-	4,447	4,447
Issue of Promoter Options[1]			740,464	740,464
Unaudited pro forma option reserve balance			744,911	744,911

[1]Promoter Options have been valued by the Directors at $740,464 using the Black Scholes method

(b) Number of options on issue

Options in Northern Cobalt	6,000,000	-	6,000,000	6,000,000
Issue of Investor Options			12,500,000	15,000,000
Issue of Promoter Options			6,500,000	6,500,000
Total			25,000,000	27,500,000
NOTE 9 – RETAINED PROFITS				
Balance pre-acquisition	(9,796)	(38,131)	(47,927)	(47,927)
Loan written off as part of Mangrove acquisition			38,675	38,675
Elimination of pre-acquisition accumulated losses			(544)	(544)
Expenses of the offer			(153,705)	(150,404)
Unaudited pro forma retained profit balance			(163,501)	(160,200)

NOTE 10 – SUBSEQUENT EVENTS

Subsequent to 31 March 2017, there has not arisen any item or transaction or event of a material and unusual nature likely, in the opinion of the directors of the Company, to affect significantly the operations of the Company, the results of those operations, or the state of affairs of the Company in future financial years other than those disclosed in and considered by these financial statements.

APPENDIX 1 NORTHERN COBALT LIMITED
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS

NOTE 11 – RELATED PARTIES

Directors

The directors in the office at the date of Prospectus are:

L Dean	Chairman
M Schwarz	Managing Director
A Shearer	Non-Executive Director
D Chessell	Non-Executive Director

Directors' interests in shares and options

The aggregate number of shares and options in the Company held by the current directors and their director related entities as at date of the Prospectus on a post-consolidation basis are:

Director	Shares	Options
L Dean	100,000	1,000,000
M Schwarz	200,000	3,000,000
A Shearer	1,200,000	450,000
D Chessell	33,750	697,500
Total	1,533,750	5,147,500

The aggregate number of shares and options in the Company in which the current directors and their director related entities will have a relevant interest on completion of the acquisition of all the shares of Mangrove are:

Director	Shares	Options	Performance Shares Class A	Performance Shares Class B
L Dean	100,000	1,000,000		
M Schwarz	200,000	3,000,000		
A Shearer	1,200,000	450,000	1,000,000	500,000
D Chessell	6,533,750[1]	697,500	2,250,000	1,012,500
Total	8,033,750	5,147,500	3,250,000	1,512,500

Note 1: D Chessell will be deemed to have a relevant interest in the 6,500,000 Shares to be issued by the Company to Coolabah Group Pty Ltd as consideration for the acquisition of 100% of Mangrove, due to Mr Chessell's holding of 25% of the issued capital of Coolabah Group Pty Ltd.

13.1 Incorporation

The Company was incorporated in South Australia as a proprietary company limited by shares on 6 March 2017. The Company converted to a public company limited by shares on 4 May 2017.

13.2 Litigation

As at the date of this Prospectus, the Company is not involved in any legal proceedings and the Directors are not aware of any legal proceedings pending or threatened against the Company.

13.3 Rights attaching to Shares

The Shares to be issued under this Prospectus will rank equally with the issued Shares. The rights attaching to Shares are:

(a) set out in the Constitution; and

(b) in certain circumstances, regulated by the Corporations Act, ASX Listing Rules, ASX Settlement Operating Rules and the general law.

A summary of the significant rights attaching to the Shares on offer pursuant to the Prospectus and a description of other material provisions of the Constitution is set out below. This summary is not exhaustive nor does it constitute a definitive statement of the rights and liabilities of Shareholders. The summary assumes that the Company is admitted to the Official List.

Full details of the rights attaching to Shares are set out in the Constitution, a copy of which is available for inspection at the Company's registered office during normal business hours.

(a) Issue of shares

Subject to the Corporations Act, ASX Listing Rules and ASX Settlement Operating Rules and any rights and restrictions attached to a class of shares, the Board may, on behalf of the Company, issue, grant options over or otherwise dispose of unissued shares to any person on the terms, with the rights, and at the times that the Board decides.

(b) Transfer of Shares

Subject to the Constitution and to any restrictions attached to a member's Shares, Shares may be transferred by a proper transfer effected in accordance with ASX Settlement Operating Rules, by a written instrument of transfer which complies with the Constitution or by any other method permitted by the Corporations Act, ASX Listing Rules or ASX Settlement Operating Rules, or by an instrument in writing in any usual form or common form the Directors approve.

(c) Share buy-backs

Subject to the Corporations Act, ASX Listing Rules and ASX Settlement Operating Rules, the Company may buy back shares in itself.

(d) Variation of class rights

If at any time the share capital is divided into different classes of shares, the rights attached to any class (unless otherwise provided by the terms of issue of the shares of that class), whether or not the Company is being wound up, may be varied or abrogated with the consent in writing of the holders of 75% of the issued shares of that class, or if authorised by a special resolution passed at a separate meeting of the holders of the shares of that class. Any variation of rights shall be subject to Chapter 2P of the Corporations Act.

(e) **Unmarketable parcels**

Subject to the Corporations Act, ASX Listing Rules and ASX Settlement Operating Rules, the Company may sell the Shares of a Shareholder who holds less than a marketable parcel of Shares.

(f) **Voting and general meeting**

Subject to any rights or restrictions for the time being attached to any class or classes of shares in the Company (at present, there is only one class of shares), whether by the terms of their issue, the Constitution, the Corporations Act or the ASX Listing Rules, at a general meeting of the Company, every Shareholder present in person or by proxy, representative or attorney has one vote on a show of hands and, on a poll, one vote for each share held.

Shareholders are entitled to be present in person, or by proxy, attorney or representative to attend and vote at general meetings of the Company.

Shareholders may requisition meetings in accordance with section 249D of the Corporations Act and the Constitution.

(g) **Dividends**

The Board may from time to time resolve to pay dividends to Shareholders and fix the amount of the dividend, the time for determining entitlements to the dividend and the timing and method of payment.

Subject to ASX Listing Rules and the Corporations Act, the rights of any preference shareholders and to the rights of holders of any shares created or raised under any special arrangement as to dividend, the Directors may from time to time declare a dividend to be paid to the shareholders entitled to the dividend. Subject to the rights of any preference shareholders and to the rights of the holders of any shares created or raised under any special arrangement as to dividend, the dividend as declared shall be payable on all shares according to the proportion that the amount paid (not credited) is of the total amounts paid and payable (excluding amounts credited) in respect of such shares.

(h) **Winding-up**

The assets of the Company must on a winding up be applied in repayment to the Shareholders in proportion to their respective holdings, subject to the rights of shareholders (if any) entitled to shares with special rights in a winding up.

(i) **Shareholder liability**

As the Shares under the Prospectus are fully paid shares, they are not subject to any calls for money by the Directors and will therefore not become liable for forfeiture.

(j) **Alteration of Constitution**

The Constitution can only be amended by a special resolution passed by at 75% of Shareholders present and voting at the general meeting. In addition, at least 28 days written notice specifying the intention to propose the resolution as a special resolution must be given.

13.4 Rights attaching to Options

(a) Terms of issue of each class of Options

	Founder Options	Investor Options	Promoter Options
Terms of issue	Issued to vendors and founders	1 Option for every 2 Shares subscribed for and issued under the Offer	To be issued under the Lead Manager Mandate
Number issued	6,000,000	Between 12,500,000 and 15,000,000	6,500,000
Eligible to	Founders and Directors	Investors in Shares under the Offer	Promoters and advisers
Share entitlement	1 Share for each Option held	1 Share for each Option held	1 Share for each Option held
Exercise Price	$0.25	$0.20	$0.25
Expiry Date	21 March 2021 An Option not exercised before the Expiry Date will automatically lapse on the Expiry Date.	2 years from date of issue An Option not exercised before the Expiry Date will automatically lapse on the Expiry Date.	4 years from date of issue An Option not exercised before the Expiry Date will automatically lapse on the Expiry Date.
Exercise Period	Options are exercisable at any time on or prior to the Expiry Date.	Options are exercisable at any time on or prior to the Expiry Date.	Options are exercisable at any time on or prior to the Expiry Date.
Quoted	No	Application for quotation will be made (see Section 2.7)	No
Transferable	No	Yes	Yes

(b) General terms and conditions applicable to all Options

i. Each Option will entitle the holder (**Optionholder**) to subscribe for one fully paid ordinary share (**Share**) in Northern Cobalt Limited (ACN 617 789 732) (**Company**) (subject to possible adjustments referred to in paragraphs (viii), (ix) and (x) below).

ii. Each Option is exercisable at any time before 5:00pm Australian Central Standard Time (ACST) on the earlier the Expiry Date.

Options not exercised before the Expiry Date will lapse.

iii. The exercise price of each Option is detailed in Section 13.4(a) (**Exercise Price**).

iv. Options are exercisable by notice in writing to the Company, delivered to the registered address of the Company and accompanied by the full payment of the Exercise Price in cleared funds.

v. Some or all of the Options may be exercised at any one time or times prior to the Expiry.

vi. Shares issued pursuant to the exercise of any of the Options will rank in all respects on equal terms with the existing Shares.

vii. Founder Options will not be freely transferable at any time before the Expiry Date. The Promoter Options will be freely transferable subject to the operation of ASX imposed escrow. The Investor Options are transferable before the Expiry Date.

viii. Options will not entitle the Optionholder to participate in any new issue of securities by the Company unless the Option has been duly exercised prior to the relevant record date. The Company will ensure that for the purposes of determining entitlements to participate in any new issues of securities to holders of Shares, that the record date will be at least five business days after the date the issue is announced.

ix. If there is a bonus issue to the holders of Shares:

(i) the number of Shares over which the Option is exercisable will be increased by the number of Shares which the holder of the Option would have received if the Option had been exercised before the record date for the bonus issue; and

(ii) no change will be made to the Exercise Price.

x. If, prior to the Expiry Date the issued capital of the Company is reorganised, the rights of the Optionholder may be varied to comply with the Corporations Act and ASX Listing Rules which apply at the time of the reconstruction.

xi. In the event the Company proceeds with a pro rata issue (except a bonus issue) of securities to holders of Shares after the date of issue of the Options, then the Exercise Price of the Options will be reduced in accordance with the formula set out in ASX Listing Rule 6.22.2.

13.5 Rights attaching to Performance Shares

Conversion and expiry of Class A Performance Shares and Class B Performance Shares

(a) **(Conversion on achievement of Class A Milestone)**

Each Class A Performance Share will convert into a Share on a one for one basis upon the earlier of:

(i) the Company announcing to ASX the delineation of an Inferred (or higher category) Mineral Resource in accordance with the JORC Code containing at least 6,000 tonnes Cobalt equivalent, at a grade of 0.12% Cobalt equivalent or greater (reported in accordance with clause 50 of the JORC Code), on the Tenements (**Class A Resource Estimate Milestone**); or

(ii) the Company selling or transferring (directly or indirectly) for value of at least $5 million to a third party (being any person or entity other than a wholly-owned subsidiary of the Company) 100% of the shares of Mangrove, or 100% of the Company's legal or beneficial interest in the Tenements (**Class A Disposal Milestone**),

within 5 years after Completion (each a **Class A Milestone**).

(b) (**A Expiry**) A Class A Milestone must be determined to have been achieved or not achieved by no later than 5:00 pm on the date that is one month after the conclusion of the time period for satisfaction set out in paragraph 1(a) (**A Expiry Date**).

(c) **(Conversion on achievement of Class B Milestone)**

Each Class B Performance Share will convert into a Share on a one for one basis upon the earlier of:

(i) the Company announcing to ASX the delineation of an Inferred (or higher category) Mineral Resource in accordance with the JORC Code containing at least 15,000 tonnes Cobalt equivalent, at a grade of 0.12% Cobalt equivalent or higher (reported in accordance with clause 50 of the JORC Code), on the Tenements (**Class B Resource Milestone**); or

(ii) the Company selling or transferring (directly or indirectly) for value of at least $20 million to a third party (being any person or entity other than a wholly-owned subsidiary of the Company) 100% of the shares of Mangrove, or 100% of the Company's legal or beneficial interest in the Tenements, (**Class B Disposal Milestone**),

within 5 years after Completion (each a **Class B Milestone**).

(d) (**B Expiry**) A Class B Milestone must be determined to have been achieved or not achieved by no later than 5:00 pm on the date that is one month after the conclusion of the time period for satisfaction set out in paragraph 1(c) (**B Expiry Date**).

(e) (**No conversion**) To the extent that Performance Shares in a Class have not converted into Shares on or before the Expiry Date applicable to that Class, then all such unconverted Performance Shares in that Class held by each Holder will automatically consolidate into one Performance Share and will then convert into one Share.

(f) (**Conversion procedure**) The Company will issue a Holder with a new holding statement for the Share or Shares as soon as practicable following the conversion of each Performance Share.

(g) (**Ranking of shares**) Each Share into which a Performance Share will convert will upon issue:

(i) rank equally in all respects (including, without limitation, rights relating to dividends) with other issued Shares;

(ii) be issued credited as fully paid;

(iii) be duly authorised and issued by all necessary corporate action; and

(iv) be issued free from all liens, charges, and encumbrances, whether known about or not, including statutory and other pre-emptive rights and any transfer restrictions.

(h) (**Disposal exclusions**) Entering into a joint venture, farm-in or other similar transaction relating to the Tenements, or any disposal or relinquishment of the Tenements due to failure to renew, failure to comply with conditions of grant, or any government action, will not be capable of constituting a Class A Disposal Milestone or a Class B Disposal Milestone.

Conversion on change of control

If there is a Change of Control Event in relation to the Company prior to the conversion of the Performance Shares, then:

(a) the Milestone will be deemed to have been achieved; and

(b) each Performance Share will automatically and immediately convert into Shares,

however, if the number of Shares to be issued as a result of the conversion of all Performance Shares due to a Change in Control Event in relation to the Company is in excess of 10% of the total fully diluted share capital of the Company at the time of the conversion, then the number of Performance Shares to be converted will be pro-rated so that the aggregate number of Shares issued upon conversion of all Performance Shares is equal to 10% of the entire fully diluted share capital of the Company.

Rights attaching to Performance Shares

(a) (**Share capital**) Each Performance Share is a share in the capital of the Company.

(b) (**General meetings**) Each Performance Share confers on a Holder the right to receive notices of general meetings and financial reports and accounts of the Company that are circulated to Shareholders. A Holder has the right to attend general meetings of Shareholders of the Company.

(c) (**No Voting rights**) A Performance Share does not entitle a Holder to vote on any resolutions proposed at a general meeting of Shareholders of the Company.

(d) (**No dividend rights**) A Performance Share does not entitle a Holder to any dividends.

(e) (**Rights on winding up**) A Performance Share does not entitle a Holder to participate in the surplus profits or assets of the Company upon winding up of the Company.

(f) (**Not transferable**) A Performance Share is not transferable.

(g) (**Reorganisation of capital**) If there is a reorganisation (including, without limitation, consolidation, sub-division, reduction or return) of the issued capital of the Company, the rights of a Holder will be varied (as appropriate) in accordance with the ASX Listing Rules which apply to a reorganisation of capital at the time of the reorganisation.

(h) (**Quotation of shares on conversion**) An application will be made by the Company to ASX for official quotation of the Shares issued upon the conversion of each Performance Share within the time period required by the ASX Listing Rules.

(i) (**Participation in entitlements and bonus issues**) A Performance Share does not entitle a Holder to participate in new issues of capital offered to holders of Shares, such as bonus issues and entitlement issues.

(j) (**No other rights**) A Performance Share does not give a Holder any other rights other than those expressly provided by these terms and those provided at law where such rights at law cannot be excluded by these terms.

13.6 Employee Incentive Plan Rules

The Company has adopted the following two Employee Incentive Plans:

a. An Employee Share Option Plan (**Option Plan**); and
b. An Employee Performance Rights Plan (**Rights Plan**),
(separately referred to as **Plan** or together the **Plans** as the context requires).

Pursuant to the applicable Plan, the Board may, in its absolute discretion offer to grant:

a. Employee share options (**Option**) to an "Eligible Employee" pursuant to the Option Plan;

and/or

b. Performance Rights (**Rights**) to an "Eligible Employee" pursuant to the Rights Plan,

having regard, in each case, to the Eligible Employee's contribution (or potential contribution) to the Company, period of employment and any other matters the Board considers in its absolute discretion to be relevant.

In the following summary of the Plans the Options and Rights shall be referred to collectively as **Awards,** unless referred to specifically.

Eligibility

a. An "Eligible Employee" is a Director, senior executive or full or part time employee of the Company or its associated body corporate (including a nominee of those persons), who is invited by the Board to participate in either the Option Plan or the Rights Plan, or both.

Terms of Awards

a. Each Option will be granted to eligible employees under the Option Plan for no more than nominal consideration. No amount is payable for the grant of a Right under the Rights Plan unless otherwise determined by the Board.
b. Each Award will entitle its holder to subscribe for and be issued one Share (on vesting and exercise of that Award).
c. The exercise price for each Option will be determined by the Board in its discretion, on or before the grant of the Option, and shall in any event be no less than the weighted average sale price of Shares sold on ASX during the five Business Days prior to the grant date or such other period as determined by the Board (in its discretion). Upon grant of Rights, the Board may determine performance conditions that must be satisfied before the Rights can vest, but no "exercise price" is applicable unless the Board has determined that an amount is payable upon satisfaction of performance conditions and vesting of the Right.
d. Awards will not be listed for quotation on ASX, however the Company will apply for Official Quotation of Shares issued upon the exercise of any vested Award.
e. A participant is not entitled to a legal or beneficial interest in any Shares by virtue of holding an Award and in particular a participant is not entitled to participate in or receive any dividend or other shareholder benefits until its Awards have vested and been exercised and Shares have been allocated to the participant as a result of the exercise of those Awards.
f. There are no participating rights or entitlements inherent in the Awards and participants will not be entitled to participate in new issues of securities offered to shareholders of the Company during the currency of the Awards, however the Company will ensure that adequate notice is given to participants in order for participants to have the opportunity to exercise vested Awards which they are entitled to exercise before the record date for determining entitlements to any such issue.

g. Following the issue of Shares following the exercise of vested Awards, participants will be entitled to exercise all rights of a Shareholder attaching to the Shares, subject to any disposal restrictions advised to the participant at the time of the grant of the Awards.

h. If there is a reconstruction of the issued capital of the Company prior to the expiry of any Awards, the number of Awards to which each participant is entitled or the exercise price of his or her Awards or any other terms will be reconstructed in a manner determined by the Board which complies with the provisions of the ASX Listing Rules.

Performance Conditions

When granting Awards, the Board may make their vesting conditional on the satisfaction of a performance condition within a specified period. The Board may at any time waive or change a performance condition or performance period in accordance with the applicable Plan rules if the Board (acting reasonably) considers it appropriate to do so.

Vesting

a. Options will vest following satisfaction of the performance conditions or such other date as determined by the Board in its discretion. A Right granted under the Rights Plan will only vest upon satisfaction of the applicable performance conditions. The Board will in its absolute discretion determine whether, and if so, to what extent each performance condition has been satisfied and must advise the participant in writing of its determination.

b. Subject to the relevant Plan rules, the Board may declare that all or a specified number of any unvested Awards granted to a participant which have not lapsed immediately vest if, in the opinion of the Board a change of control in the Company, or a person acquires a relevant interest in more than 90% of the shares in the Company, has or is likely to occurr, having regard to the participant's pro rata performance in relation to the applicable performance conditions up to that date.

c. Subject to the rules of each Plan, the Board may in its absolute discretion, declare the vesting of an Award where the Company is wound up or passes a resolution to dispose of its main undertaking.

d. If there is any internal reconstruction or acquisition of the Company which does not involve a significant change in the identity of the ultimate shareholders of the Company, the Board may declare in its sole discretion whether and to what extent Awards, which have not vested by the date the reconstruction takes place, will vest, and may amend (or waive) any performance condition as it considers appropriate, subject to all applicable laws.

Exercise of Awards

a. The exercise of any Option granted under the Option Plan must be effected in the form and manner described in the Plan rules.

b. Options will become exercisable if any performance conditions set by the Board at the time of the grant are met, the Options have vested, the expiry date has not passed, and the Option has not lapsed under the Option Plan rules.

c. A Right can be exercised if the applicable performance condition is satisfied, in the form and manner determined by the Board, and if the Board has determined an amount is also payable on the satisfaction of the performance condition, that amount must also be paid to the Company at the time of exercise.

Lapse and Forfeiture

a. An Award will immediately lapse upon the first to occur:
   i. (in respect of an unvested Award) upon the passing of the vesting date (as determined by the Board) without the Option having vested;
   ii. its expiry date;
   iii. the performance conditions (if any) not being satisfied prior to the date specified by the Board;
   iv. the transfer or purported transfer of the Awards without the prior consent of the Board in accordance with the Plan rules;
   v. the day that is 3 months following the date the participant (or the nominating participant if applicable) ceases to be employed or engaged by the Company or its associated body corporate;
   vi. termination of the participant's (or in the nominating participant) employment or engagement with the Company or its associated body corporate on the basis that the participant acted fraudulently, dishonestly, in breach of the participant's obligations or otherwise for cause; and
   vii. the day which is 6 months after any event giving rise to vesting under the rules of the Plan.

b. a Share issued on the exercise of an Award will be forfeited upon the holder perpetrating fraud against, acting dishonestly, or committing a breach of its obligations to, the Company or any of its associated bodies corporate.

Restrictions

a. Notwithstanding anything else in the Plan, an Award may not be offered, granted or exercised if to do so would contravene the Corporations Act, the ASX Listing Rules, or any other law, and to the extent that the Plan rules are inconsistent with the ASX Listing Rules, the ASX Listing Rules shall prevail.

b. The maximum number of Options that can be issued under the Option Plan, and the maximum number of Rights that can be issued under the Rights Plan, is that number which equals 5% of the total number of issued Shares in existence from time-to-time subject to the Corporations Act, the ASX Listing Rules or any other statutory or regulatory requirements.

c. Participants in the Plans are prohibited from transferring Awards (as well as any Shares issued under the Option Plan on exercise of Options) without the consent of the Board, except during a takeover Options (but not Rights) may be transferred (subject to the Option Plan rules) to the bidder or the bidder's nominee during the takeover period.

13.7 Interests of Directors

Other than as set out in this Prospectus, no Director or proposed Director holds, or has held within the 2 years preceding lodgement of this Prospectus with ASIC, any interest in:

(a) the formation or promotion of the Company;

(b) any property acquired or proposed to be acquired by the Company in connection with:

   (i) its formation or promotion; or

   (i) the Offer; or

(c) the Offer,

and no amounts have been paid or agreed to be paid and no benefits have been given or agreed to be given to a Director or proposed Director:

(d) as an inducement to become, or to qualify as, a Director; or

(e) for services provided in connection with:

(i) the formation or promotion of the Company; or

(ii) the Offer.

13.8 Interests of experts and advisers

Other than as set out below or elsewhere in this Prospectus, no:

(a) person named in this Prospectus as performing a function in a professional, advisory or other capacity in connection with the preparation or distribution of this Prospectus; or

(b) promoter of the Company,

holds, or has held within the 2 years preceding lodgement of this Prospectus with ASIC, any interest in:

(c) the formation or promotion of the Company;

(d) any property acquired or proposed to be acquired by the Company in connection with:

(i) its formation or promotion; or

(ii) the Offer; or

(e) the Offer,

and no amounts have been paid or agreed to be paid and no benefits have been given or agreed to be given to any of these persons for services provided in connection with:

(f) the formation or promotion of the Company; or

(g) the Offer.

Independent Geologist

Ravensgate International Pty Ltd (**Ravensgate**) has acted as Independent Geologist and has prepared the Independent Geologist's Report which is included in Section 10. Ravensgate have also provided an Independent Resource Estimate of the Stanton Cobalt Deposit. The Company estimates it will pay Ravensgate a total of $52,505 (excluding GST) for these services. During the 24 months preceding lodgement of this Prospectus with ASIC, Ravensgate has not received fees from the Company for services other than preparation of the Independent Geologist's Report and the Independent Cobalt Industry Report.

Independent Consultant

Ravensgate has acted as an Independent Consultant and has prepared the Independent Cobalt Industry Report which is included in Section 5. The Company estimates it will pay Ravensgate a total of $10,000 (excluding GST) for these services. During the 24 months preceding lodgement of this Prospectus with ASIC, Ravensgate has not received fees from the Company for services other than preparation of the Independent Geologist's Report and the Independent Cobalt Industry Report.

Investigating Accountant

Pendragon Capital Ltd has acted as Investigating Accountant and has prepared the Investigating Accountant's Report which is included in Section 12. The Company estimates it will pay the Investigating Accountant a total of $14,000 (excluding GST) for these services. During the 24 months preceding lodgement of this Prospectus with ASIC, Pendragon Capital Ltd has not received any fees from the Company for any other services.

Lead Manager

PAC Partners Pty Ltd has acted as the Lead Manager of the Offer. The Lead Manager will receive 6% of the total amount raised under the Prospectus (plus GST) following the successful completion of the Offer for its services as Lead Manager to the Offer. The Lead Manager will be responsible for paying all capital raising fees that the Lead Manager and the Company agree with any other financial service licensees. Further details in respect to the Lead Manager Mandate are summarised in Section 8.3. Other than $36,000 received as a 6% capital raising fee with respect to the seed capital raising in March 2017, PAC Partners Pty Ltd has not received any other fees for other services provided to the Company in the last 2 years.

Australian legal adviser

Edwards Mac Scovell Legal has acted as Australian legal adviser to the Company in relation to the Offer. The Company estimates it will pay Edwards Mac Scovell Legal $62,000 (excluding GST) for these services. Subsequently, fees will be charged in accordance with normal charge out rates. During the 24 months preceding lodgement of this Prospectus with ASIC, Edwards Mac Scovell Legal has not received fees from the Company for any other services.

Independent Solicitors

All Mining Legal Pty Ltd has acted as Independent Solicitors reporting on tenements in the Solicitor's Report on Tenements which is included in Section 11. The Company estimates that it will pay All Mining Legal Pty Ltd $8,000 (excluding GST) for these services. During the 24 months preceding lodgement of this Prospectus with ASIC, All Mining Legal Pty Ltd has not received fees from the Company for any other services.

Auditor

Grant Thornton has been appointed to act as auditor to the Company. The Company has paid Grant Thornton a total of $3,000 (excluding GST) for services in connection with the audited accounts of the Company and Mangrove for the period ended 31 March 2017. Other than this amount, during the 24 months preceding lodgement of this Prospectus with ASIC, Grant Thornton has not provided services to the Company.

Share Registry

Security Transfer Australia Pty Ltd has been appointed to conduct the Company's share registry functions and to provide administrative services with respect to the processing of applications received pursuant to this Prospectus and will be paid for these services on standard industry terms and conditions.

13.9 Consents

Chapter 6D of the Corporations Act imposes a liability regime on the Company (as the offeror of the Securities), the Directors, the persons named in the Prospectus with their consent as Proposed Directors, any underwriters, persons named in the Prospectus with their consent having made a statement in the Prospectus and persons involved in a contravention in relation to the Prospectus, with regard to misleading and deceptive statements made in the Prospectus, Although the Company bears primary responsibility for the Prospectus, the other parties involved in the preparation of the Prospectus can also be responsible for certain statements made in it.

Each of the parties referred to in Section 13.8:

(a) does not make, or purport to make, any statement in this Prospectus other than those referred to in this Section 13.9; and

(b) in light of the above, only to the maximum extent permitted by law, expressly disclaims and takes no responsibility for any part of this Prospectus other than a reference to its name and a statement included in this Prospectus with the consent of that party as specified in this Section 13.8.

Independent Geologist

Ravensgate has given its written consent to being named as Independent Geologist in this Prospectus, the inclusion of the Independent Geologist's Report in Section 10 in the form and context in which the report is included and the inclusion of statements contained in this Prospectus in the form and context in which those statements are included. Ravensgate has not withdrawn its consent prior to lodgement of this Prospectus with ASIC.

Independent Consultant

Ravensgate has given its written consent to being named as an Independent Consultant in this Prospectus, the inclusion of the Independent Cobalt Industry Report in Section 5 in the form and context in which the report is included and the inclusion of statements contained in this Prospectus in the form and context in which those statements are included. Ravensgate has not withdrawn its consent prior to lodgement of this Prospectus with ASIC.

Investigating Accountant

Pendragon Capital Ltd has given its written consent to being named as Investigating Accountant in this Prospectus and to the inclusion of the Investigating Accountant's Report included in Section 12 in the form and context in which the information and report is included. Pendragon Capital Ltd has not withdrawn its consent prior to lodgement of this Prospectus with ASIC.

Lead Manager

PAC Partners Pty Ltd has given its written consent to being named as the Lead Manager to the Offer in this Prospectus. PAC Partners Pty Ltd has not withdrawn its consent prior to the lodgement of this Prospectus with ASIC.

Australian legal adviser

Edwards Mac Scovell Legal has given its written consent to being named as Australian legal adviser to the Company in this Prospectus. Edwards Mac Scovell Legal has not withdrawn its consent prior to the lodgement of this Prospectus with ASIC.

Independent Solicitors

All Mining Legal Pty Ltd has given its written consent to being named as Independent Solicitors reporting on tenements in this Prospectus and to the inclusion of the Solicitor's Report on Tenements in Section 11 in the form and context in which the report is included. All Mining Legal Pty Ltd has not withdrawn its consent prior to the lodgement of this Prospectus with ASIC.

Auditor

Grant Thornton has given its written consent to being named as auditor in this Prospectus in the form and context in which the information is included. Grant Thornton has not withdrawn its consent prior to lodgement of this Prospectus with ASIC.

Security Registry

Security Transfer Australia Pty Ltd has given its written consent to being named as the Share Registry to the Company in this Prospectus. Security Transfer Australia Pty Ltd has not withdrawn its consent prior to the lodgement of this Prospectus with ASIC.

13.10 Expenses of the Offer

The total expenses of the Offer (excluding GST) are estimated to be approximately $566,355 for the Minimum Subscription or $631,355 for the Maximum Subscription and are expected to be applied towards the items set out in the table below:

Item	Minimum Subscription	Maximum Subscription
ASIC fees	$2,350	$2,350
ASX fees	$62,500	$67,500
Lead Manager fees *	$300,000	$360,000
Legal fees **	$70,000	$70,000
Independent Geologist's Fees	$52,505	$52,505
Investigating Accountant's Fees	$14,000	$14,000
Consulting Fees***	$35,000	$35,000
Printing and distribution	$15,000	$15,000
Miscellaneous	$15,000	$15,000
TOTAL	**$566,355**	**$631,355**

* The Lead Manager will be responsible for paying all capital raising fees that the Lead Manager and the Company agree with any other licensed securities dealers or Australian financial services licensee out of these fees paid by the Company to the Lead Manager. For a summary of the Lead Manager Mandate refer to Section 8.3.

** The legal fees are for services provided by Edwards Mac Scovell Legal and All Mining Legal Pty Ltd.

*** The consulting fees are for the preparation of the Independent Cobalt Industry Report and for services provided by Forrest House Pty Ltd, a company connected with Jay Stephenson, in connection with the Offer.

13.11 Continuous disclosure obligations

Following admission of the Company to the Official List, the Company will be a "disclosing entity" (as defined in section 111AC of the Corporations Act) and, as such, will be subject to regular reporting and disclosure obligations. Specifically, like all listed companies, the Company will be required to continuously disclose any information it has to the market which a reasonable person would expect to have a material effect on the price or the value of the Company's securities.

Price sensitive information will be publicly released through ASX before it is disclosed to Shareholders and market participants. Distribution of other information to Shareholders and market participants will also be managed through disclosure to ASX. In addition, the Company will post this information on its website after ASX confirms an announcement has been made, with the aim of making the information readily accessible to the widest audience.

13.12 Electronic Prospectus

If you have received this Prospectus as an electronic Prospectus, please ensure that you have received the entire Prospectus accompanied by the Application Form. If you have not, please contact the Company and the Company will send you, for free, either a hard copy or a further electronic copy of this Prospectus or both. Alternatively, you may obtain a copy of this Prospectus from the website of the Company at www.northerncobalt.com.au.

The Company reserves the right not to accept an Application Form from a person if it has reason to believe that when that person was given access to the electronic Application Form, it was not provided together with the electronic Prospectus and any relevant supplementary or replacement prospectus or any of those documents were incomplete or altered.

In such a case, the Application moneys received will be dealt with in accordance with section 722 of the Corporations Act.

13.13 Financial forecasts

The Directors have considered the matters set out in ASIC Regulatory Guide 170 and believe that they do not have a reasonable basis to forecast future earnings on the basis that the operations of the Company are inherently uncertain. Accordingly, any forecast or projection information would contain such a broad range of potential outcomes and possibilities that it is not possible to prepare a reliable best estimate forecast or projection.

13.14 Clearing House Electronic Sub-Register System (CHESS) and issuer sponsorship

The Company will apply to the ASX to participate in the Securities Clearing House Electronic Sub-register system known as CHESS.

CHESS is operated by ASX Settlement Pty Ltd in accordance with the ASX Listing Rules and the ASX Settlement Operating Rules. Under CHESS, the Company will not be issuing certificates to Applicants who elect to hold their Securities on the CHESS sub-register. After allotment of Securities, Shareholders will receive a CHESS holding statement.

The CHESS holding statements, which are similar in style to bank account statements, will set out the number of Securities allotted to each Shareholder pursuant to this Prospectus. The CHESS holding statement will also advise holders of their holder identification number and explain for future reference the sale and purchase procedures under CHESS. Further statements will be provided to holders which reflect any changes in their shareholding in the Company during a particular month.

13.15 Privacy statement

By filling out an Application Form to apply for Securities, you are providing personal information to the Company through the Company's service provider, the Share Registry, which is contracted by the Company to manage Applications. The Company, and the Share Registry on its behalf, collect, hold and use that personal information to process your Application, service your needs as a Shareholder, provide facilities and services that you request and carry out appropriate administration.

If you do not provide the information requested in the Application Form, the Company and the Share Registry may not be able to process or accept your Application.

Your personal information may also be provided to the Company's agents and service providers on the basis that they deal with such information in accordance with the Company's privacy policy. The types of agents and service providers (who may be located outside of Australia) that may be provided with your personal information and the circumstances in which your personal information may be shared are:

(a) the Share Registry for ongoing administration of the Shareholder register;

(b) printers and other companies for the purpose of preparing and distributing statements and for handling mail;

(c) market research companies for the purpose of product development, product planning and analysing the Company's Shareholder base; and

(d) legal and accounting firms, auditors, contractors, consultants and other advisers for the purpose of administering, and advising on, the Securities and for associated actions.

You may request access to your personal information held by (or on behalf of) the Company. You may be required to pay a reasonable charge to the Share Registry to access your personal information. You can request access to your personal information by contacting the Share Registry on +61 3 9628 2200 between 8:30 am and 3:00 pm WST.

If any of your information is not correct or has changed, you may require it to be corrected.

13.16 Governing law

This Prospectus and the contracts that arise from the acceptance of Applications under the Offer are governed by the law applicable in South Australia and each Applicant submits to the non-exclusive jurisdiction of the courts of South Australia.

This Prospectus is issued by the Company and its issue has been authorised by a resolution of the Directors.

The Directors report that after due enquiries by them, in their opinion, there have not been any circumstances that have arisen or that have materially affected or will materially affect the assets and liabilities, financial position, profits or losses or prospects of the Company, other than as disclosed in this Prospectus.

In accordance with section 720 of the Corporations Act, each Director has authorised the issue of this Prospectus and has consented to the lodgement of this Prospectus with ASIC and has not withdrawn that consent.

Signed for and on behalf of the Company by:

_____

Michael Schwarz
Managing Director
Northern Cobalt Limited

The following terms used in this Prospectus have the following meanings, unless the context requires otherwise:

$ means an Australian dollar.

Acquisition means the acquisition of Mangrove, which holds the Tenements, by the Company pursuant to the Share Sale Agreement, as described in Section 8.1.

Applicant means a person who submits an Application Form.

Application Form means the application form attached to or accompanying this Prospectus relating to the Offer.

ASIC means the Australian Securities and Investments Commission.

ASX means ASX Limited (ACN 008 624 691) or the financial market operated by it as the context requires.

ASX Settlement means ASX Settlement Pty Ltd (ACN 008 504 532)

ASX Settlement Operating Rules means the ASX Settlement Operating Rules of ASX Settlement.

ASX Listing Rules means the official listing rules of ASX.

Board means the board of Directors as constituted from time to time.

Business Day means a day that is not a Saturday, Sunday or public holiday in Adelaide, South Australia.

Change of Control Event means:

(a) the occurrence of:

  (i) the offeror under a takeover offer in respect of all Shares announcing that it has achieved acceptances in respect of 50.1% or more of the Shares; and

  (ii) that takeover bid has become unconditional; or

(b) the announcement by the Company that:

  (i) Shareholders of the Company have at a Court convened meeting of Shareholders voted in favour, by the necessary majority, of a proposed scheme of arrangement under which all Shares are to be either:

    (A) cancelled; or

    (B) transferred to a third party; and

  (ii) the Court, by order, approves the proposed scheme of arrangement.

Closing Date means the closing date of the Offer as set out in the indicative timetable in the Offer Information Section of this Prospectus (subject to the Company reserving the right to extend the Closing Date or close the Offer early).

Company or **Northern Cobalt** means Northern Cobalt Limited (ACN 616 317 778).

Completion means the date of completion of the Acquisition in accordance with the terms of the Share Sale Agreement.

Completion Date means that date which is 7 Business Days after the satisfaction or waiver of the last of the conditions precedent to the Share Sale Agreement (or such other date as is agreed between the Company and the Vendor).

Consideration Shares means the 6,500,000 Shares, 10,000,000 Class A Performance Shares and 4,500,000 Class B Performance Shares payable by the Company to the Vendor for the Acquisition pursuant to the terms and conditions of the Share Sale Agreement.

Constitution means the constitution of the Company.

Coolabah or **Vendor** means Coolabah Group Pty Ltd (ACN 166 770 896).

Corporations Act means the *Corporations Act 2001* (Cth).

Directors means the directors of the Company at the date of this Prospectus.

Exposure Period means the period of 7 days after the date of lodgement of this Prospectus, which period may be extended by ASIC by not more than 7 days pursuant to section 727(3) of the Corporations Act.

Founder Option means an Option issued to certain founders and vendors of the Company, as described in Section 13.4.

HOA means the binding Heads of Agreement entered into on or about 31 March 2017 between the Company, Coolabah and Mangrove whereby Coolabah granted the Company the Mangrove Option.

Holder under Section 13.5, means a holder of a Performance Share.

Investor Option means a free-attaching Option issued on the basis of one Investor Option for every 2 Shares subscribed for and issued, as described in Section 13.4.

JORC Code or **JORC 2012** means The Australian Code for Reporting of Mineral Resources and Ore Reserves (2012 Edition) prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists, and the Minerals Council of Australia.

Lead Manager means PAC Partners Pty Ltd (ACN 165 738 438).

Lead Manager Mandate means the mandate agreement entered into between the Company and the Lead Manager on 11 May 2017 and as further described in Section 8.3.

Mangrove means Mangrove Resources Pty Ltd (ACN 612 043 240).

Mangrove Option means the option granted by Coolabah to the Company to acquire the Mangrove Share pursuant to the terms and conditions of the HOA, which was replaced on 16 June 2017 by the Share Sale Agreement.

Mangrove Share means one fully paid ordinary share in the capital of Mangrove being 100% of the issued share capital of Mangrove.

Maximum Subscription means the maximum amount to be raised under the Prospectus, being $6,000,000 assuming oversubscriptions of 5,000,000 Shares (a total of 30,000,000 Shares) at $0.20 per Share are accepted.

Mineral Titles Act means the *Minerals Titles Act 2010* (NT).

Minimum Subscription means the minimum amount to be raised under the Offer, being $5,000,000.

Mining Assets means all the assets owned by Mangrove and related to the Tenements and includes:

(a) all technical information relating to the Tenements (in whatever form); and

(b) the Tenements.

NTA means the *Native Title Act 1993* (Cth).

Offer means the offer of Securities pursuant to this Prospectus as set out in Section 2.

Official List means the official list of ASX.

Official Quotation means official quotation by ASX in accordance with ASX Listing Rules.

Option means an option to acquire a Share and includes Founder Options, Investor Options and Promoter Options.

Optionholder means a holder of an Option.

Performance Share means a performance share described in Section 13.5.

Project means the Wollogorang Cobalt Project described in Section 4.

Promoter Option means an Option to be issued pursuant to the Lead Manager Mandate, as described in Section 13.4.

Prospectus means this prospectus.

Ravensgate means Ravensgate International Pty Ltd (ACN 606 524 896) that prepared the Independent Geologist's Report in Section 10 and the Independent Cobalt Industry Report in Section 5.

Recommendations means The Corporate Governance Principles and Recommendations (3rd Edition) as published by ASX Corporate Governance Council.

Section means a section of this Prospectus.

Securities means all securities offered under this Prospectus, being the Shares and Investor Options.

Share means a fully paid ordinary share in the capital of the Company.

Share Registry means Security Transfer Australia Pty Ltd (ACN 008 894 488)

Share Sale Agreement means the Option and Share Sale Agreement between the Company, Coolabah and Mangrove dated 16 June 2017 pursuant to which, subject to exercise of the Mangrove Option, Coolabah has agreed to sell and the Company has agreed to buy the Mangrove Share on certain terms and conditions. **Shareholder** means a holder of Shares.

Tenements means Northern Territory Exploration Licences 30496, 30590, and 31272, and any Mineral Lease granted on an area contained within those tenements, or any Exploration Licence or other tenement granted in substitution for any of those Tenements or any part of them.

VALMIN Code means the Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets (2015 Edition) prepared by the VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists.

WST means Western Standard Time as observed in Perth, Western Australia.

APPLICATION FORM

THIS DOCUMENT IS IMPORTANT. IF YOU ARE IN DOUBT AS TO HOW TO DEAL WITH IT, PLEASE CONTACT YOUR STOCK BROKER OR LICENSED PROFESSIONAL ADVISOR.

NORTHERN COBALT LIMITED

ACN: 617 789 732

BROKER STAMP

All Correspondence to:
Security Transfer Australia Pty Ltd
PO Box 52
Collins Street West VIC 8007
T: +1300 992 916 F: +61 8 9315 2233
E: registrar@securitytransfer.com.au
W: www.securitytransfer.com.au

Broker Code

Advisor Code

PLEASE READ CAREFULLY ALL INSTRUCTIONS ON THE REVERSE OF THIS FORM
This application relates to the offer of Fully Paid Ordinary Shares at the price of A$0.20 per Share and free attaching Investor Options on the basis of one for every 2 Shares subscribed for.
No Securities will be issued pursuant to the Prospectus later than 13 months after the date of the Prospectus.
Before completing this Application Form you should read the accompanying Prospectus and the instructions overleaf. Please print in BLOCK LETTERS.

I / We apply for:

, , **shares at AUD$0.20 per Share (and Investor Options as set out in the Prospectus)**

or such lesser number of Shares and which may be allocated to me/us by the Directors.

I/We lodge full application of monies of:

A $, , .

BPAY **www.securitytransfer.com.au**

BPAY® this payment via internet or phone banking.
Please visit our share registry's website: www.securitytransfer.com.au and complete the online application form.

If electronic payment cannot be made then cheque(s) or bank draft(s) can be used.
See reverse for further payment instructions.

Full Name of Applicant / Company
Title (e.g.: Dr, Mrs) Given Name(s) or Company Name

Joint Applicant #2
Title (e.g.: Dr, Mrs) Given Name(s) or Company Name

Joint Applicant #3
Title (e.g.: Dr, Mrs) Given Name(s) or Company Name

Account Designation (for example: THE SMITH SUPERFUND A/C)
< >

Postal Address
Unit | Street Number | Street Name or PO BOX

Suburb / Town / City | State | Postcode

Country Name (if not Australia)

CHESS HIN (where applicable)
X

If an incorrect CHESS HIN has been provided (for example, an incorrect number as registration details do not match those registered) any securities issued will be held on the Issuer Sponsored sub-register.

Tax File Number / Australian Business Number

Tax File Number of Security Holder #2 (Joint Holdings Only)

Contact Name

Contact Number
( )

Email Address
@

Declaration and Statements:
(1) I/We declare that all details and statements made by me/us are complete and accurate.
(2) I/We agree to be bound by the Terms & Conditions set out in the Prospectus and by the Constitution of the Company.
(3) I/We authorise the Company to complete and execute any documentation necessary to effect the issue of Securities to me/us.
(4) I/We have received personally a copy of the Prospectus accompanied by or attached to this Application form, or a copy of the Application Form or a direct derivative of the Application Form before applying for the Securities.
(5) I/We acknowledge that the Company will send me/us a paper copy of the Prospectus and any Supplementary Prospectus (if applicable) free of charge if I/we request so during the currency of the Prospectus.
(6) I/We acknowledge that returning the Application Form with the application monies will constitute my/our offer to subscribe for Securities in the Company and that no notice of acceptance of the application will be provided.

TO MEET THE REQUIREMENTS OF THE CORPORATIONS ACT, THIS FORM MUST NOT BE HANDED TO ANY PERSON UNLESS IT IS ATTACHED TO OR ACCOMPANIED BY THE PROSPECTUS DATED 30 JUNE 2017 AND ANY RELEVANT SUPPLEMENTARY PROSPECTUS.

This Application Form relates to the Offer of Fully Paid Shares and Investor Options in Northern Cobalt Limited pursuant to the Prospectus dated 30 June 2017.

APPLICATION FORMS

Please complete all parts of the Application Form using BLOCK LETTERS. Use correct forms of registrable name (see below). Applications using the wrong form of name may be rejected. Current CHESS participants should complete their name and address in the same format as they are presently registered in the CHESS system.

Insert the number of Shares you wish to apply for. The application must be for a minimum of 10,000 Shares and thereafter in multiples of 1,000 Shares. The applicant(s) agree(s), upon and subject to the terms of the Prospectus, to take any number of Shares equal to or less than the number of Shares indicated on the Application Form that may be allotted to the applicants pursuant to the Prospectus together with free attaching Investor Options on the basis of one for every two Shares subscribed for, and declare(s) that all details of statements made are complete and accurate.

No notice of acceptance of the application will be provided by the Company prior to the allotment of Shares and Investor Options. Applicants agree to be bound upon acceptance by the Company of the application.

Please provide us with a telephone contact number (including the person responsible in the case of an application by a company) so that we can contact you promptly if there is a query in your Application Form. If your Application Form is not completed correctly, it may still be treated as valid. There is no requirement to sign the Application Form. The Company's decision as to whether to treat your application as valid, and how to construe, amend or complete it shall be final.

PAYMENT

BPAY | www.securitytransfer.com.au

BPAY® your payment via internet or phone banking. Please visit our share registry's website: www.securitytransfer.com.au and complete the online application form. All online applicants can BPAY their payments via internet or phone banking. A unique reference number will be quoted upon completion of the application.

® Registered to BPAY Pty Ltd ABN 69 079 137 518

Applicants should be aware of their financial institution's cut-off time (the time payment must be made to be processed overnight) and ensure payment is processed by their financial institution on or before the day prior to the closing date of the offer.

BPAY applications will only be regarded as accepted if payment is received by the registry from your financial institution on or prior to the closing date. It is the applicant's responsibility to ensure funds are submitted correctly by the closing date and time.

You do not need to return any documents if you have made payment via BPAY.
Your BPAY reference number will process your payment to your application electronically and you will be deemed to have applied for such securities for which you have paid.

All cheques should be made payable to **NORTHERN COBALT LIMITED IPO ACCOUNT** and drawn on an Australian bank and expressed in Australian currency and crossed "Not Negotiable". Cheques or bank drafts drawn on overseas banks in Australian or any foreign currency will NOT be accepted. Any such cheques will be returned and the acceptance deemed to be invalid. Sufficient cleared funds should be held in your account as your acceptance may be rejected if your cheque is dishonoured. Do not forward cash as receipts will not be issued.

LODGING OF APPLICATIONS

Completed Application Forms and cheques must be:

Posted to:
NORTHERN COBALT LIMITED
C/- Security Transfer Australia Pty Ltd
PO Box 52
Collins Street West VIC 8007

OR

Delivered to:
NORTHERN COBALT LIMITED
C/- Security Transfer Australia Pty Ltd
Suite 913, 530 Little Collins Street
Melbourne, VIC, 3000

Applications must be received by no later than 5:00pm WST on the 7 August 2017 which may be changed immediately after the Opening Date at any time and at the discretion of the Company.

CHESS HIN/BROKER SPONSORED APPLICANTS

The Company intends to become an Issuer Sponsored participant in the ASX CHESS System. This enables a holder to receive a statement of holding rather than a certificate. If you are a CHESS participant (or are sponsored by a CHESS participant) and you wish to hold shares allotted to you under this Application on the CHESS sub-register, enter your CHESS HIN. Otherwise, leave this box blank and your Shares will automatically be Issuer Sponsored on allotment.

CORRECT FORM OF REGISTRABLE TITLE

Note that only legal entities are allowed to hold securities. Applications must be in the name(s) of a natural person(s), companies or other legal entities acceptable to Northern Cobalt Limited. At least one full given name and the surname are required for each natural person. The name of the beneficiary or any other non-registrable name may be included by way of an account designation if completed exactly as described in the example of the correct forms of registrable names below:

TYPE OF INVESTOR	CORRECT	INCORRECT
Individual *Use given names in full, not initials.*	Mr John Alfred Smith	J A Smith
Company *Use the company's full title, not abbreviations.*	ABC Pty Ltd	ABC P/L or ABC Co
Joint Holdings *Use full and complete names.*	Mr Peter Robert Williams & Ms Louise Susan Williams	Peter Robert & Louise S Williams
Trusts *Use trustee(s) personal name(s), Do not use the name of the trust.*	Mrs Susan Jane Smith <Sue Smith Family A/C>	Sue Smith Family Trust
Deceased Estates *Use the executor(s) personal name(s).*	Ms Jane Mary Smith & Mr Frank William Smith <Estate John Smith A/C>	Estate of Late John Smith or John Smith Deceased
Minor (a person under the age of 18) *Use the name of a responsible adult with an appropriate designation.*	Mr John Alfred Smith <Peter Smith A/C>	Master Peter Smith
Partnerships *Use the partners' personal names. Do not use the name of the partnership.*	Mr John Robert Smith & Mr Michael John Smith <John Smith and Son A/C>	John Smith and Son
Superannuation Funds *Use the name of the trustee(s) of the super fund.*	Jane Smith Pty Ltd <JSuper Fund A/C>	Jane Smith Pty Ltd Superannuation Fund

PRIVACY STATEMENT

Personal information is collected on this form by Security Transfer Australia Pty Ltd as the registrar for securities issuers for the purpose of maintaining registers of security holders, facilitating distribution payments and other corporate actions and communications. Your personal details may be disclosed to related bodies corporate, to external service providers such as mail and print providers, or as otherwise required or permitted by law. If you would like details of your personal information held by Security Transfer Australia Pty Ltd or you would like to correct information that is inaccurate please contact them on the address on this form.