Dr Michael Green
Independent Mining Analyst

DOC Investments Limited,
Kemp House,
152 City Road,
London EC1V 2NX

doc@docinvest.co.uk

NQ Minerals

Key information
Ticker: NQMI
Share price: 2.5p
52 week high-low: 12p – 1.15p
Shares in issue: 325.27m
Market Cap: £8.1m
Market: NEX
Sector: Mining

Business
100% interest in polymetallic flagship Hellyer Mine in Tasmania, which has over US$1 billion of contained gold, silver, zinc and lead plus considerable existing mine infrastructure.
NQ Minerals is also developing two exploration projects (Ukalunda and Square Post) in North Queensland, located in prospective mining districts that form part of the well-known Charters Towers Gold Province.

Website
www.nqminerals.com

Calendar
Interims: September
Finals: May
AGM: June

10 October 2019

HELLYER Gold Mines

Improved performance with higher recoveries, increased production and rapidly rising sales of concentrates

- **High-grade tailings and impressive infrastructure.** NQ Minerals' (NQ) came of age with the acquisition of the Hellyer Gold Mine in 2017. This gold polymetallic tailings project is set on a clear growth trajectory based on the existing infrastructure and resources. The updated CPR has forecast impressive levels of revenue and EBITDA leading to the determination of compelling NPV/IRR numbers, due to the robust margins and strong cash generation which Hellyer has begun to demonstrate.
- **Enhanced consistency and higher monthly production.** Robust margins are due to the available metal content coupled with low mining and processing costs. In the 1H 2019, revenue hit £14.2m with a gross profit of £3.4m. Latest news is that NQ is seeing improved consistency and subsequent further improvements in monthly production volumes already in H2 2019 as a result of processing plant modifications. Hellyer has been de-risked following its transition to an operating status and now the board is in advanced discussions to restructure the early stage debt, a move which should serve to improve NQ's financial position.
- **Potential expansion into Electric Vehicle (EV) battery metals.** The ideal customer for NQ's pyrite concentrate would be a local nickel laterite operation as sulphuric acid is their big cost item. Recent investments in Tasmania Energy Metals (TEM) could see the Company gaining a 100% interest in the Barnes Hill Ni-Co Project in Tasmania, where the combined entity has the potential to be a low-cost nickel producer. Such a move would allow the Company to recover precious/base metals in the pyrite concentrate. NQ is working with TEM to explore value creation opportunities.
- **Sustainable growth story with a long-term future.** After 10 years, NQ will have empty tailings ponds and available processing plant capacity. Looking ahead, the board has their eyes set on the enviable potential of nearby high-grade a volcanic massive sulphide (VMS) deposits as Hellyer is located within the Mount Read volcanics. This mineralised belt is the well-known home to substantial profitable polymetallic production at mines such as: Hercules, Que River, Roseberry and Mount Lyell.
- **Sound foundation on which to build a broadly-based mining entity.** Being the re-start of an existing project means that cash flow and profits can be achieved quicker than the seven years it would probably take to permit and construct a new mine. Over the last few months, Hellyer has begun to deliver the forecast strong cash flows. At the same time, recent developments are beginning to outline creditable expansion opportunities moving ahead. Hellyer should provide a solid basis on which to build a leading gold and base metal production, development and exploration company.

INTRODUCTION

The 100%-owned Hellyer Gold Polymetallic Tailings Project in Tasmania, Australia is NQ Minerals Plc's flagship project. Hellyer is located in NW Tasmania 80km south of the port of Burnie. These tailings represent substantial reserves of zinc, lead, silver, gold and copper which result from the mining of the very rich polymetallic Hellyer Gold Mine in the 1990s.

NQ acquired the Hellyer Gold Mine in June 2017 and along with the tailings, the assets included a large pre-existing mill facility and full supporting infrastructure which provides access to a direct rail line to the port. The Company holds consolidated granted mining leases CML103M/1987 for an area which contains the tailings ponds and the associated processing plant.

Hellyer Gold Polymetallic Tailings Project

Hellyer provides the potential for NQ to become a substantial producer. September 2018 saw the start of production with first concentrate sales in November 2018. The updated Competent Person Report (CPR) (AusGEMCO May 2018) estimated that the project could generate a total revenue of US$706m (£574m) over a 10-year period with an average annual EBITDA of US$28m (£22m). Beyond that time there is the opportunity to use the capacity of the mill and tailings ponds to take advantage of other similar high-grade polymetallic VMS deposits within this highly prospective area.

In June 2019, NQ announced an investment in Tasmania Energy Metals Pty Ltd (TEM) which owns the Barnes Hill Nickel-Cobalt project. When the interim results were announced on 27 September 2019, the Company reported that the prospects appear promising and that it is continuing to work with TEM to explore value creating opportunities. At that stage, NQ's Chairman also reported that the Company had commenced work on environmental, metallurgical and technical reports to evaluate this initiative. Through this investment, the Company has been granted an exclusive option to acquire the entire share capital of TEM where the option originally expired on 31 July 2019 but was extended for a further three months to 31 October 2019 to allow further analysis of this opportunity.

Hellyer Mill

CPR estimates Hellyer Project[1]
Revenue US$706m (over 10 years)
EBITDA US$28m/year (average)
Post Tax NPV US$136m
Post Tax IRR 232%
Operating Margin 39%
[1] excludes payability of precious metals in pyrite concentrate

Project economics for Hellyer Sources: Updated CPR (AusGEMCO May 2018) and NQ Overview September 2019

BACKGROUND

Mine development commenced in 1987 at the world class Hellyer underground mine under the ownership of Aberfoyle. The Hellyer deposit was mined by underground methods for lead, zinc, copper, gold and silver in the 1989- 2000 period.

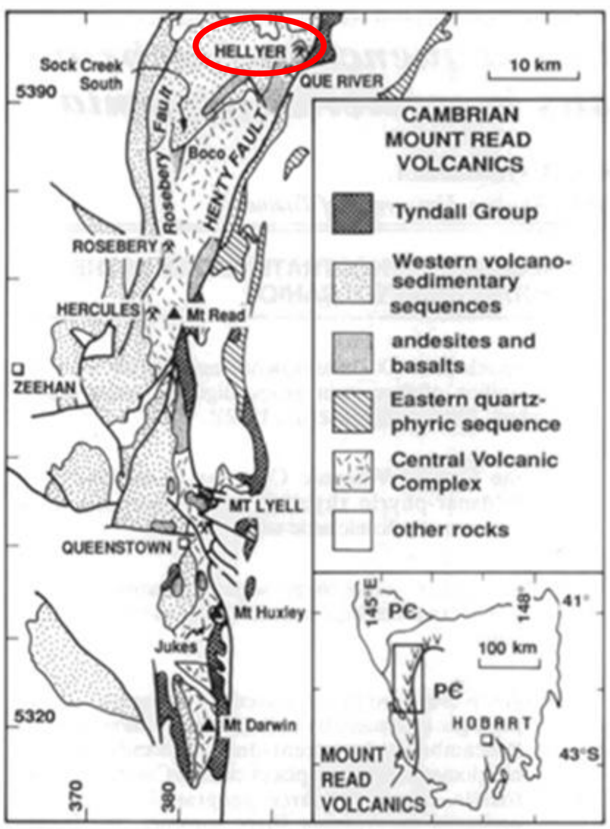
There were also two brief periods of further activity. Firstly, between 2006-08 when the tailings were partially dredged by Polymetals Group. Secondly, in the 2010-12 period when Bass Metals mined the Fossey deposit which extends down plunge from the Hellyer deposit.

Tailings from the mill during Aberfoyle's ownership were deposited in a depression 1km away and the area flooded to prevent oxidation of the sulphides. Later, in 2010-12 the tailings were partially dredged by Polymetals and retreated. At this time, the reprocessed tailings were deposited in the Shale Pit and Western Arm. Whilst, tailings from processed Fossey deposit were also discharged into the Western Arm.

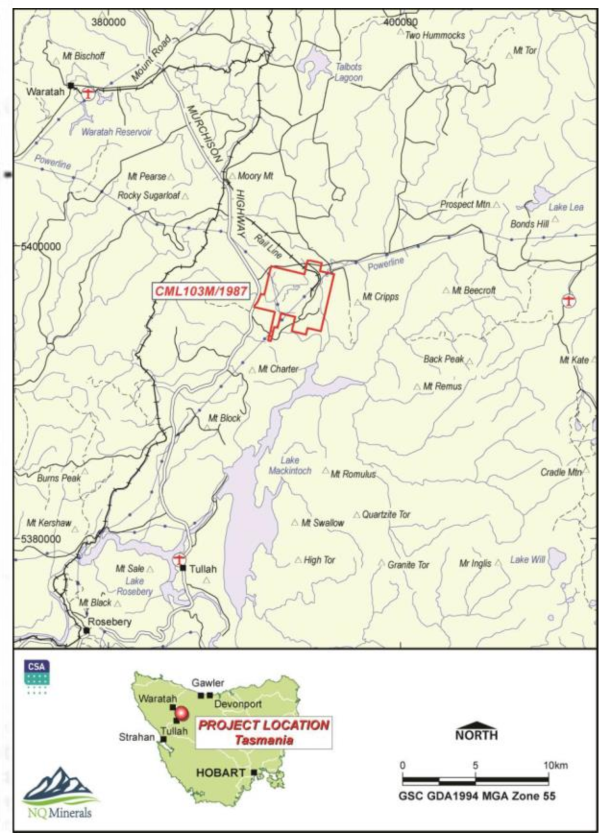
NQ acquired the project for £22.1 million (A$20 million plus shares equivalent to a then 29.9% stake in the company). Swift progress has been since that time, with the granting of final permit and start of the refurbishment program in October 2017 and February 2018 respectively.

GEOLOGY

The Hellyer deposit is a volcanic polymetallic massive sulphide (VMS) deposit that lies within the Mount Read volcanic arc of western Tasmania. The Mount Read volcanics are a Cambrian volcanic belt which has become complex due to folding, faulting and events associated with plate tectonics. VMS deposits are a type of metal sulphide ore deposit, mainly copper-zinc, created by volcanic-associated hydrothermal events underwater, which are a significant source of the world's base and precious metals.



Mount Read volcanics - distribution of the principal lithostratigraphic formations and major massive sulphide deposits. Source: Paper by J McPhie & J.B. Gemmel



Project location

At Hellyer, the VMS deposit is a well-developed alteration zone and stringer vein system. The mineralisation is sulphide hosted and mainly comprised of pyrite, with lesser sphalerite, galena and arsenopyrite. There are both base metal sulphide zones and distinct areas of strong base metal veins called stringer zones, which are largely found on the footwall of the main part of the Hellyer deposit that has been mined.

The Hellyer stringer zone contains thick synmineralisation veins which are the channels used by hydrothermal solutions to pass up through the alteration zone to the sea floor. The metal zoning seen at Hellyer, does highlight the presence of several feeder systems that underlie the deposit.

The Mount Read volcanics represent a productive mineralised belt that has profitable polymetallic production. The region has seen extensive historical mining and hosts similar deposits which include Hercules Mine (lead, zinc, copper, silver & gold), Que River (zinc, copper, lead, gold & silver), Roseberry (zinc, lead, copper & gold), Mt Lyell (copper) and the Henty Gold Mines. In addition, there are also many smaller sites of prospective mineralisation spread along the West Coast Range.

RESERVES & RESOURCES

	Gold	Silver	Lead	Zinc
Reserves **8.04Mt**	664,300oz 2.57g/t	24,100,000oz 93g/t	245,400t 3.05%	205,000t 2.55%
Resources **9.5Mt**	790,000oz 2.61g/t	32,000,000oz 104g/t	287,800t 3.03%	237,900t 2.5%

JORC Compliant Reserves (economically feasible for extraction) and total Resources.
Sources: NQ Overview September 2019 and interim results (27-09-19)

OPERATIONS

Hellyer came with comprehensive infrastructure and a decent mill which was constructed to process material from the previous mining operations. The mill is a 1.6Mtpa flotation plant equipped with a semi-autogenous grinding (SAG) mill, ball mills and flotation cells. It was constructed in 1988 but still represents a very good mill today. When built, the mill was a state-of-the-art plant and fully automated with an impressive control system allowing the plant to work on a 24/7 shift system manned by a relatively small team.

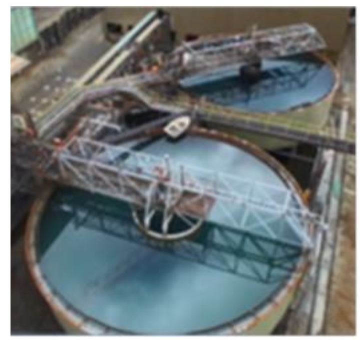
Hellyer Mill

The tailings are held within four separate ponds and extracted by dredging. Past daily production records clearly show the quality of the material that went into the tailings dams, and Mineral Resource Estimate (MRE) in the CPR seems to quite closely match these past records. The MRE was based on the assay results from around one hundred holes that were drilled into the tailings. The dredge follows a well-designed mine plan where the highest quality tailings are excavated early on to optimise project economics.

The refurbishment program included upgrading the mill to be working at a higher level of concentrate production than in the past which has required the capacity of the filter presses to be upgraded to 1.2Mtpa.

Tailings are excavated by dredging

The extensive infrastructure that came with the Hellyer acquisition included an undercover concentrator loading station with direct access to an 80km railway to the port where there is housing, handling and loading facilities for the concentrates. Initially the concentrates are being trucked to the port.



Ball mill ***Concentrators*** ***Thickeners***

PRODUCTION

High-grade tailings are being processed on site in the mill to produce three marketable concentrates. Operational improvements together with a more consistent mining and processing throughput has allowed the operations to report a progressive trend in production, sales and cash flow generation.

The first six months of 2019 have seen the restarting of the operations at Hellyer which has been challenging. However, results for this period show improved plant performance and output quarter on quarter. In 1H 2019, combined plant and dredge availability averaged 91.7% (92% forecast) and throughput of processed tailings averaged 98.7t/hr (89t/hr forecast) which translated into mill tonnage for the period of 392kt (360kt forecast). This all resulted in H1 2019 seeing a strong production of concentrates which generated a revenue of £14.154m and a gross profit of £3.407m.

Concentrate	**2018**	**2019**			
	Q4	**Q1**	**Q2**	**H1**	**Comments**
Lead	3,991t	4,712t	5,452t	10,164t	Lead grade averaged 36.92% (37% forecast) with 760g/t silver and 5.4g/t gold.
Zinc	1,537t	3,015t	4,416t	7,431t	Zinc grade averaged 43.9% (45% forecast) with 225 g/t silver and 2.3 g/t gold.
Precious metals/Pyrite	4,291	18,488t	28,375t	46,863t	Sulphur grade averaged 43% (45-48% forecast) with 136g/t silver and 3.8g/t gold.

Concentrate production in Q4 2018 & 1H 2019. Source: NQ announcements

The focus has been on maximising the saleability of the concentrates which has been achieved by the development of a 3-stage sequential flotation process. Improvements in recoveries have resulted from the team's increased understanding of the flotation processing characteristics of the tailings, which has allowed plant operating conditions to be adjusted to meet the required criteria.

To further improve metallurgical performance, medium to longer term initiatives are planned such as: active management of particle oxidation, potential for separate size flotation and the potential for complementary separation techniques including multi-gravity separation.

The second half of the current year has seen improved plant performance and increasing production. Modifications made to the processing plant in July/August 2019 have already resulted in improved consistency which has provided subsequent further improvements in monthly production volumes.

Base metal recoveries in H1 2019 were lower than forecast, but if the trend of continued improvement is maintained then the forecasted rates could be achieved in H2 2019. When the interims were announced (27-09-19), operations were reported to have continued to progress well with further positive improvements in recoveries witnessed in recent months. Production of concentrates does seem to be increasing rapidly towards targeted levels.

Year ending 31 August	**ROM tails t**	**Zinc t**	**Lead t**	**Gold oz**	**Silver oz**	**Arsenic t**
2019	720,000	17,566	23,707	61,043	2,166,531	11,359
2020	900,000	23,601	28,194	74,889	2,769,431	13,358
2021	1,200,000	28,607	35,460	96,585	3,508,898	16,441
2022	1,200,000	23,973	29,334	94,611	3,399,268	16,562
2023	1,200,000	35,079	39,507	102,457	3,625,897	17,038
2024	1,200,000	25,732	30,592	90,843	3.042,513	12,885
2025	1,200,000	29,350	29,814	90,167	2,999,944	15,504
2026	1,200,000	30,071	41,205	103,249	3,969,218	12,865
2027	880,362	8,804	22,889	72,742	2,434,169	0

Projected annual Run of Mine (ROM) production schedule. Source: AusGEMCO May 2018

ECONOMICS

Note that the Hellyer Project economics relate solely to Hellyer and exclude both potential revenue from other Group projects and Group overhead.

Hellyer looks set on a clear growth path based on the existing infrastructure and resources. The project bears all the hallmarks of being a strong cash generator. Over the current 10-year life of the project, revised independent estimates for Hellyer forecast an aggregate revenue of over US$706m (£574m) and an average annual EBITDA of US$28m (£23m).

The project has been demonstrated to possesses compelling economics with a post-tax NPV of US$136m (£111m), post-tax IRR of 232% and an operating margin of 39%. It must be pointed that all the above numbers exclude the payability of precious metals in the pyrite concentrate. (Sources: AusGEMCO May 2018 and NQ Overview September 2019).

Such an impressive forecasted return results from a powerful combination of robust margins and low capex. These are high-grade tailings and so the all-in margin is robust due to this high level of available metal content, which is coupled with attractively low mining and processing costs. At the same time, the Company's tailored marketing approach ensures the optimisation of both plant and product.

Low capex is due to the existing base metal processing facilities on site along with the abundant existing infrastructure which includes water, power, railway spur line and nearby port. This has provided NQ with substantial benefits and meant that the start-up capital expenditure to re-commence production was low by industry standards.

Stretching out into the future is a long-term stream of reliable revenue, cash flow, profits and earnings. The project economics have encouraged lenders to provide debt finance to cover most of the acquisition cost along with the necessary start-up capital expenditure. This way of financing has served to limit dilution for shareholders.

The board believes that the improving trend in recoveries, production, revenue and cash flow will provide an opportunity for NQ to restructure its current debt facilities. As at 30 June 2019, borrowing stood at £65.6 million principally on short-term arrangements. Now that the project has been operationally de-risked, NQ is in advanced discussions to restructure the early stage debt over a longer period and at a lower interest rate, which should serve to improve the Company's financial position.

PROJECT PIPELINE

At the end of this ten-year period when the tailings have become exhausted, NQ will have the capacity in the mill and the tailings ponds to take similar high-grade polymetallic VMS deposits in the area and might not have to look that far for its next project.

Over its previous 11-year operational life, Hellyer produced 15Mt of ore that yielded 610,000t of bulk concentrate, 2.7Mt of zinc concentrate and 728,000t of lead concentrate. Hellyer was an extremely high-grade mine with combined zinc and lead grades of at an unusually high level of 20%. Exploration in the nearby area could pay dividends as has been proven over the years, the best place to find a new mine is often next to an old one.

The Mount Read volcanic arc has been a substantial producer of base metals in the 20th Century hosting 5 major deposits with an accumulated total of 350Mt+ of ore. VMS deposits in this area are capped which makes them hard to find, but electrical methods (resistivity, induced polarisation, electromagnetics etc) are highly effective in identifying such targets as they respond to the electrical conductivity of the rocks and minerals.

STRATEGY FOR GROWTH

Hellyer is fast proving to be a rapid and sustainable growth story. This is an economically viable asset where the management has outlined a clear plan to commercialisation with a number of major milestones already successfully passed. The Hellyer Gold Polymetallic Tailings Project represents a low-risk project with comparatively low-cost implementation. Rising production and improving recoveries has resulted in sales of concentrates generating strong revenues.

In our view this is a sustainable growth story as in ten years' time there will be a further opportunity to use the capacity of the mill and tailings ponds to take advantage of other similar high-grade polymetallic VMS deposits. The recent investments in TME herald a potentially attractive opportunity for the Company to become involved in the fast-growing electric vehicle (EV) battery metals market. The ideal customer for Hellyer's pyrite concentrate has always been a local nickel laterite operation as sulphuric acid represents the biggest cost in the treatment of nickel-cobalt in lateritic surface deposits.

The TME deal could see the Company gaining a 100%-interest in the Barnes Hill Nickel-Cobalt Project in Tasmania, which has substantial resources of nickel laterite lying immediately below the surface allowing a potential 18-year life of mine based on the current JORC-compliant resource. NQ is investigating an integrated facility for the treatment of precious metals produced at Hellyer with further exposure to metals used in EV battery market. See our "*The Hellyer Nickel Cobalt plan"* report (07-08-19) which has been published on NQ's website.

The acquisition of Hellyer was a company-making deal. Being the re-start of an existing project means that cash flow/profits can be achieved a lot quicker than the seven years it would probably take to permit and construct a new mine. Hellyer has now been de-risked with the transition to an operating status with strong cash flows whilst recent developments are beginning to outline a sound opportunity for further expansion.

Dr Michael Green is an independent analyst who specialising in growth companies and resources companies. He gained a BSc Honours degree in Mining Engineering from Nottingham University, UK and PhD for a thesis that looked at the economic analysis of mining projects. Having been involved in consultancy work, Michael began working in the City in the 1980s as a Mining Analyst with stockbrokers Buckmaster & Moore and then HSBC-owned Greenwell Montagu Securities. Subsequently, he was involved in analysing a wide range of growth companies and became Head of Research at stockbroker Everett Financial which specialised in the small cap market. Since, 2006 Michael has been an independent analyst. He has specialised in analysing companies in the resources sector providing research for mining companies, stockbrokers, corporate finance houses, advisers and independent research firms. Between 2008 – 2011, he was a Non-Executive Director of Ascot Mining PLC, a quoted Central American gold mining company. In addition, he has worked closely with resources companies assisting in IR.

RISK FACTORS

The following risk factors are considered to be the most significant for potential investors in the company. However, the risks listed do not necessary comprise all those associated with an investment in the Company:

General

- The Company will require additional financial resources to continue funding its future expansion. No assurance can be given that any such additional financing will be available or that, if available, it will be available on terms favourable to the company or its shareholders.
- The Company's total return and net assets can be significantly affected by currency movements.
- The Company is likely to face competition from other entities operating in its business sector, many of which have significantly greater resources than the company.
- Market perception of the Company may change.
- Development projects are uncertain and it is possible that actual capital and operating costs and economic returns will differ significantly from those estimated for a project prior to production.
- Each prospective investor should view his purchase of equity shares in the Company as a long-term investment and should not consider such purchase unless they are certain they will not have to liquidate their investment for an indefinite period. The market price of the shares may not reflect the underlying value of the assets of the Company.
- The market in the shares may be illiquid or subject to sudden or large fluctuations and it may be difficult for an investor to sell his shares and may receive less than the amount originally invested.

Exchange

- The Company's shares are traded on NEX Exchange. Investments in shares traded on NEX carry a higher degree of risk than investments in shares quoted on the official list of the UK Listing Authority or on the Alternative Investment Market.

Company Specific

- Your attention is drawn to Note 2 (Going Concern) to the audited accounts to 31 December 2018 published on 31 May 2019. As at the accounts date the Company had negative shareholder' funds of £18.9m, financial liabilities of £31m and net current liabilities of £14m. These conditions indicate a material uncertainty that may cast significant doubt about the Company's ability to continue as a going concern. In the Interim accounts to 30 June 2019 total financial liabilities had increased to £65.6m and net current liabilities to £20.0m. On the publication date, 27 September 2019, the directors stated that the Company has been in advanced discussions to restructure the debt facilities. Although the Directors believe that they will be able to secure funds on more favourable terms aligned to the projected cash flow of the Hellyer project, there is no certainty that this will happen.
- The Company will require funding to refinance its debt and complete its expansion plans. There is no assurance that the Company will be able to obtain such financing, when required, on favourable terms or at all. Any failure by the Company to raise sufficient funding could have a materially adverse impact on the Company and the value of its securities.
- The Company's business is the extraction of minerals which is subject to environmental, safety and community risk.
- The Company's current and potential end products, base and precious metals, are subject to fluctuating prices on international markets.

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