31 March 2015

ASX Release **ASX Code: CXX**

POSITIVE PRE-FEASIBILITY STUDY RESULTS FOR PANDA HILL

Highlights

- **Preliminary Feasibility Study demonstrates a world class niobium resource with excellent metallurgical recoveries**
  - **First 10 years average grade: 0.68% Nb_2O_5**
  - **First 10 years average recovery: 63%**
  - **LOM average grade: 0.54% Nb_2O_5**
  - **LOM average recovery: 62%**
- **Initial 10 years mining predominantly in the higher grade, high recovery Angel Zone**
- **Results indicate a highly economic project with low initial capital outlay**
  - **NPV_{10} post tax and royalties US$470M**
  - **IRR 56%**
- **Key Preliminary Feasibility Study results include:**
  - **Initial capital expenditure of US$158M**
  - **Payback period 1.5 years[1]**
  - **Working capital US$37M**
  - **LOM of 30 years**
  - **LOM average EBITDA US$103M per annum**
  - **First 10 year average EBITDA US$133M per annum**
- **An experienced ferroniobium marketer has been engaged to continue the process of securing offtake**
- **Project financing is underway and being coordinated by the Denham-backed Pangea team**
- **Environmental baseline study is well progressed with no significant issues identified**

Cradle Resources Limited ("Cradle") is pleased to announce the results of a Preliminary Feasibility Study ("PFS" or "Study") for the Panda Hill Niobium Project ("Project" or "Panda Hill") in Tanzania. The Study is reported in accordance with JORC Code (2012) and incorporates the results of Cradle's extensive investigations since 2012, including the results of 87 reverse circulation ("RC") and diamond drill holes ("DDH") (for 10,800m) drilled by Cradle and comprehensive metallurgical, engineering, environmental and site studies.

Grant Davey, the Managing Director of Cradle, commented: *"We are very pleased with the results of the PFS, which demonstrates a highly economic, world class Project. The PFS substantially de-risks the Project following on from excellent results achieved with the resource drilling and the metallurgical test work last year. We focused the Study on a higher grade mining schedule that delivers the optimal early cash flow for the Project. With the Definitive Feasibility Study already underway, and an updated Mineral Resource due out shortly, we are well advanced in ensuring that Panda Hill will be the next niobium producer.*

[1] From fully funded

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<u>Cautionary Statement concerning Production Target Results including Inferred Resources</u>

Cradle advises that the PFS results and production targets reflected in this announcement are preliminary in nature as conclusions are drawn partly from Indicated Mineral Resources and partly from Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated or Measured Mineral Resources or that the production target itself will be realised.

The PFS was prepared by MDM Engineering Projects Ltd ("MDM") who also undertook plant design and cost estimates and incorporated technical aspects from Coffey Mining Pty Ltd ("Coffey") for the Mineral Resource estimate, SRK Consulting (Australasia) Pty Ltd ("SRK") for the geotechnical analysis and mine planning, including open pit optimisation, pit design, production scheduling, operating cost and capital expenditure estimation, SGS Canada Inc. ("SGS") for metallurgical test work, SLR Consulting (Africa) Pty Ltd ("SLR") for tailings and water studies and MTL Consulting Company Ltd ("MTL") for environmental and social studies. The Mineral Resources underpinning the PFS have been prepared in accordance with the JORC Code (2012) by Mr Ingvar Kirchner of Coffey Mining (Perth). Competent Person statements and the relevant responsible persons are compiled at the end of this announcement***.***

THE PANDA HILL PFS IN SUMMARY

PRODUCTION PROFILE

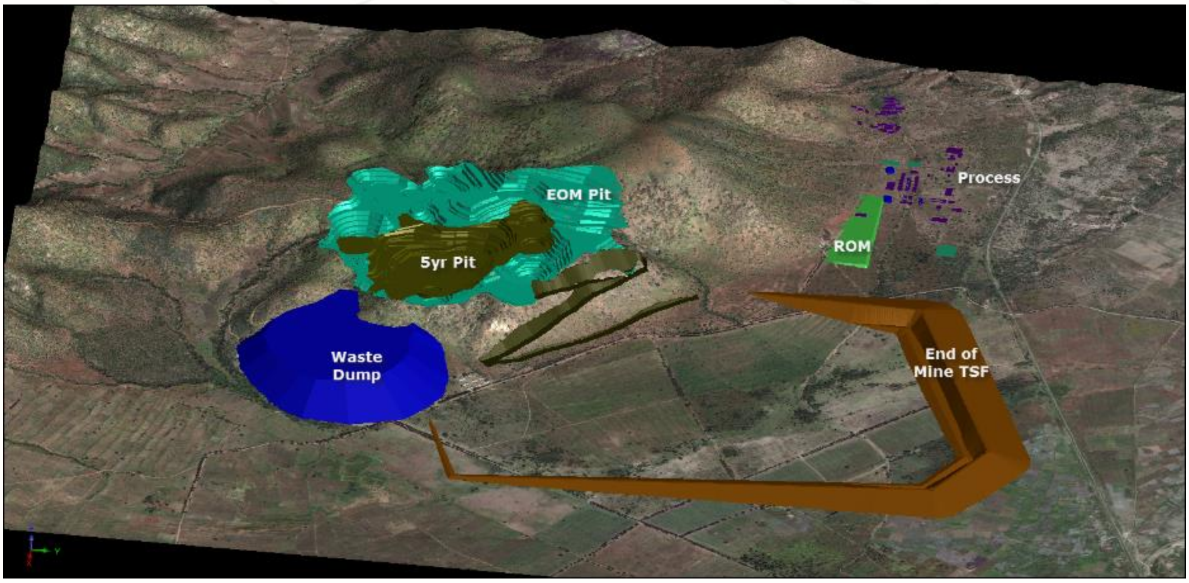
The "Base Case" for the PFS is centred upon an open pit mining operation providing 2Mtpa mill feed over a 30 year life of mine ("LOM"). This is the same scale of operation that was considered in the Scoping Study and is the current size of Magris Resources' Niobec operation in Canada, thus allowing useful comparative analysis. With the success achieved in the PFS in both mill feed grade and metallurgical recoveries the initial ferroniobium production from a 2Mtpa plant now approximates 8 to 10% of world production. For this reason, and to simplify financing arrangements, the Definitive Feasibility Study ("DFS") will be scoped so as to achieve a more modest entry into the market (i.e. throughput commencing at 1Mtpa). The DFS will allow for expansion of production as demand grows.

The production schedule has been developed to only target the carbonatite type mineralogy, achieve an average grade of around 0.68% Nb_2O_5 in the first 10 years of production and utilises only the Indicated Mineral Resource in the first 5 years (the payback period) of operation. Indicated Mineral Resources form 100% of the mill feed for the first 5 years and 78% of the mill feed material used in the first 10 years of the Project, over the modelled 30 years of the Project an average of 36% Indicated Mineral Resource material and 64% Inferred Mineral Resource material has been used.

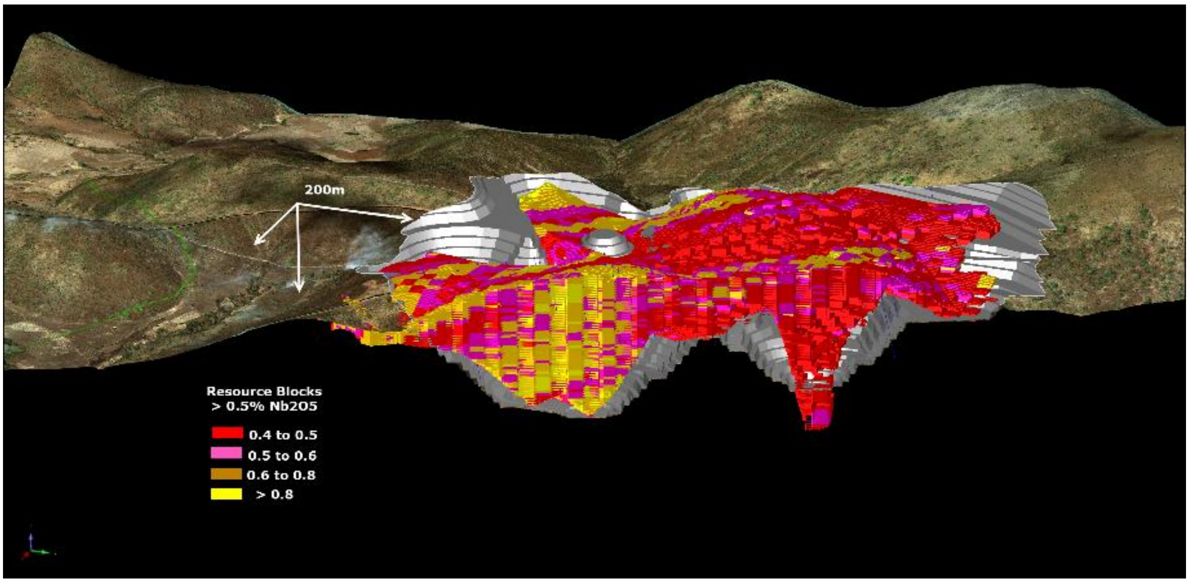
In the early years of production the successive pit cut-backs will target the high-grade Angel Zone with further expansion targeting the medium-grade, but high-recovery fresh sovite mineralisation to the North.

It is noted that over the 2 years of drilling, and through 3 major drilling campaigns undertaken by Cradle, there has been a high conversion rate of Inferred Mineral Resources to Indicated Mineral Resources.

A further Mineral Resource upgrade is due in May 2015 following the results of the third phase drilling campaign completed last December.



PFS pit designs (5 year and Life of mine ("LOM")) with key infrastructure



Long-section (looking south-west) showing the LOM pit design and block-model grade blocks

METALLURGY

Cradle has undertaken extensive metallurgical test work on representative core samples. The program to date has included an initial investigation program as part of the 2013/14 Scoping Study, a comprehensive development program and an optimisation stage; the latter two as part of the PFS program. A total of 165 batch flotation tests and 17 locked cycle tests have been completed as part of these programs. A variability test program and pilot testing are still to be done and will form part of the DFS.

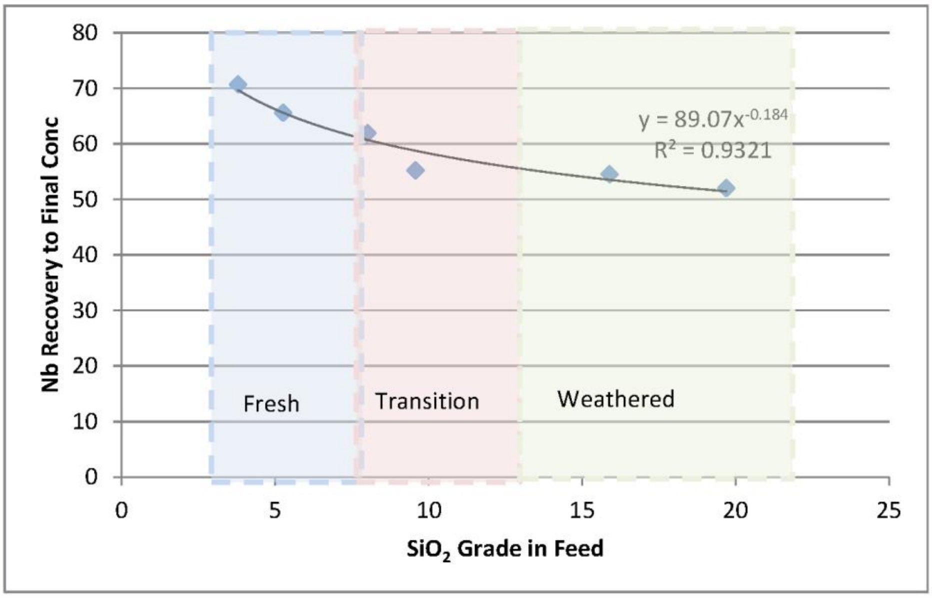
The initial test work focused on all mineralised material identified within the deposit, but after the development stage this was narrowed down to focus only on the carbonatite type material (which contains >80% of the niobium), which can be treated more efficiently and have a higher overall recovery with a higher grade concentrate. Material types tested in the various programs included the specific material types from each of the defined geological zones as well as blended composites that are representative of the average carbonatite found in each zone.

The test work demonstrated that the same circuit configuration could be successfully used for all three main material types, and that only minor changes to the reagent addition rates were required to achieve the reported results. The metallurgical recoveries realised were in the range of 52% to 70% across the range of carbonatites tested as shown in the graph below.

As part of the optimisation program significant success was also achieved in reducing flotation reagent consumption. In particular the consumption of fluorosilicic acid (H_2SiF_6) and oxalic acid ($H_2C_2O_4$), two of the most significant costs in the process were reduced by over ~40% from the values reported in the Scoping Study (see table below).

Flotation Reagent	**PFS**			**Scoping Study**
Material Type	**Oxidised Carbonatite**	**Moderately Oxidised Carbonatite**	**Fresh Carbonitite**	**Fresh Carbonitite**
Dispersant (Calgon)	150	230	100	250
Depressant (Oxalic Acid)	750	750	900	2000
Depressant/pH control (MIX3)	700	850	800	N/A
Activator/depressant (H_2SiF_6)	3100	1800	3400	5000
Nb Collector (PL701)	730	450	630	300
Pyrite Collector (PAX)	80	80	80	80
Frother (U250C)	5	10	5	5

Stage Flotation Reagent Consumptions in g/tonne



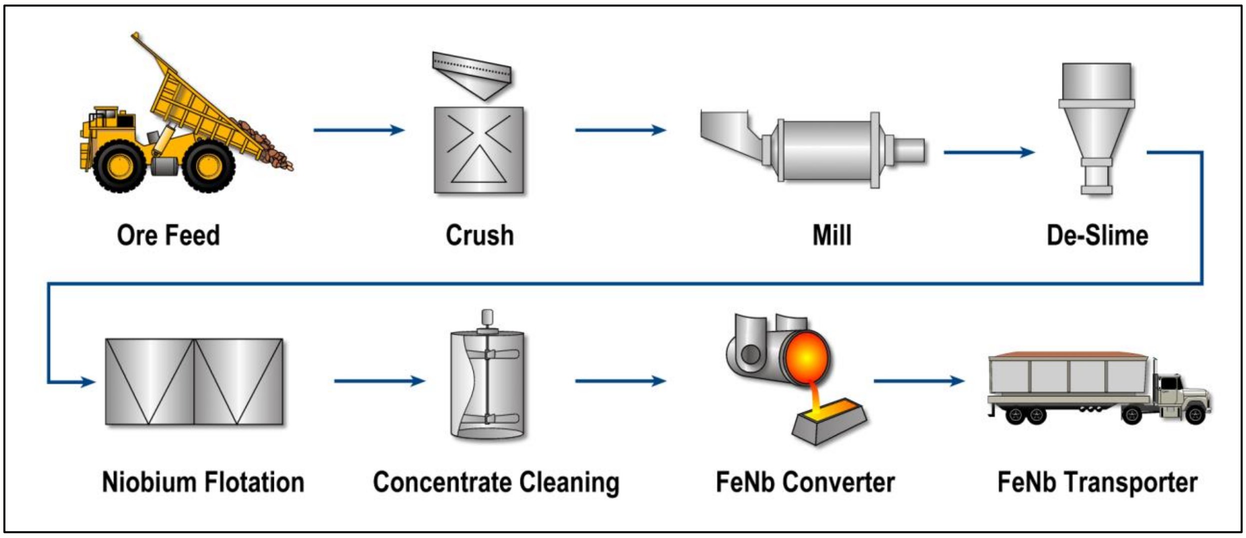
Niobium Recovery Trend by Geological Zone with approximate SiO_2 Feed Grade

As a final stage of the process before the conversion to ferroniobium, a concentrate cleaning step is required to remove phosphate, a contaminant for steel. The concentrate cleaning stage proposed by Cradle consists of an acid pre-leach followed by a caustic leach (similar to Anglo American's Catalão niobium mine). This process was shown not only to be successful in reducing phosphate below required specification (0.15% P_2O_5), but also reduced SiO_2 levels significantly (target <3.5%) and increased Nb_2O_5 grades, such that the constraints on the flotation process can be relaxed to improve recoveries (see table below).

Test #	Leach Feed (Flotation Concentrate)			Leach Residue (Converter Feed)		
	$\%Nb_2O_5$	$\%SiO_2$	$\%P_2O_5$	$\%Nb_2O_5$	$\%SiO_2$	$\%P_2O_5$
Caustic Leach (Test CL2) (fresh carbonatite)	49.6	7.2	0.28	52.6	2.61	0.07
Caustic Leach (Test CL9) (oxidised carbonatite)	49.5	11.3	0.29	57.5	1.05	0.05
Caustic Leach (Test CL10) (strongly oxidised carbonatite)	36.5	21.9	0.38	53.5	2.17	0.06

PROCESSING

As the Panda Hill mineralisation is a relatively clean material with low levels of impurities (particularly uranium, tantalum and titanium), and well liberated mineralisation at coarse grind, a single-stage flotation method can be used to process the niobium ore. The Panda Hill mineralisation is unique amongst Niobium projects currently under study in that this simple flotation, and non-complex hydrometallurgical process, can be used to upgrade the materials.



Stylised processing route for the Panda Hill Niobium Project. Panda Hill shares a similar processing path to the operating Niobec mine (Canada) and is fortunate to be able to utilise a low-cost single-stage flotation method

A HIGH-QUALITY FERRONIOBIUM END PRODUCT

Standard grade ferroniobium ("FeNb") makes up some 90% of world niobium consumption, the rest consisting of high purity niobium oxide and some vacuum grade (high grade) ferro/nickel niobium. These latter types are specialised products and are supplied almost exclusively by Companhia Brasileira de Metalurgia e Mineração (Brazil) ("CBMM"). The Panda Hill Niobium Project will only produce standard grade ferroniobium, with the converter product (FeNb) being crushed, screened and packaged onsite to meet the specific customer demands. In general the sized product will be packaged in 1 tonne super-bags or 250kg steel drums, with some packaging into smaller 10lb or 25lb pails. Repackaging into these smaller lots will be done either onsite or at warehousing facilities closer to the end user. The relatively small size of the product packaging is due to the low addition rates (0.02 to 0.05%) required in the production of High Strength Low Alloy Steels ("HSLA"), the major use of FeNb. The anticipated specifications for the Panda Hill Ferroniobium compared to the industry average are shown in the table below.

Element	**Av Spec (%)**	**Panda Hill (%)[2]**
Niobium	63.0	66.0
Iron	Balance	Balance
Aluminium	<2.00	1.00
Tantalum	<0.50	0.25
Silicon	<3.00	2.00
Phosphorous	<0.20	0.10
Titanium	<2.00	1.00
Sulphur	<0.10	0.04
Carbon	<0.20	0.12
Manganese	<0.75	0.55

The ferroniobium will be marketed worldwide once offtake agreements are in place with the major steel mills in North America, Europe and some parts of Asia. In other areas sales are intended to be through metal traders or trading houses. The final product will be transported to Dar es Salaam (~650km away) by road or rail and then shipped either directly to our customers or to designated warehouses before being distributed.

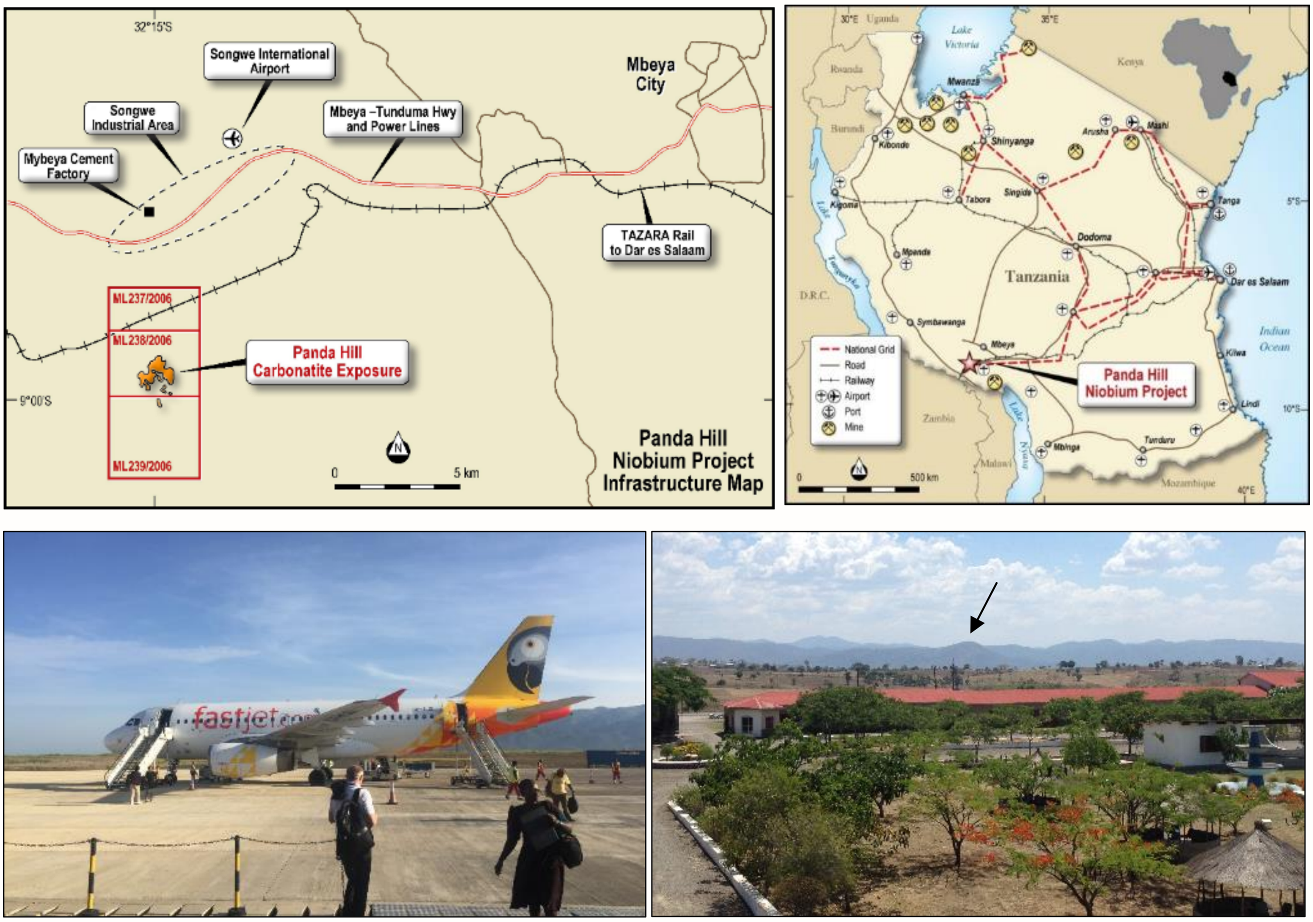

Examples of how the ferroniobium end-product will be packaged for transport

[2] Based on concentrate specifications from test work and theoretical modelling of converter

EXCELLENT INFRASTRUCTURE

The Project is fairly unique in that it has excellent nearby infrastructure including: TAZARA Rail line (2km away), a dry port located in Mbeya (26km away), the Dar es Salaam - Tunduma Highway (5km away), Songwe Airport (8km away), the La Farge Songwe Cement Factory (6km away) and a major fuel depot in Mbeya. Access to water and power is also relatively simple with the Songwe River, a major water course, running next to the mining tenements and TANESCO planning a new 400kV power line that will run past the licence area.

The Mbeya region is also a developing mining area with the established Shanta goldmine less than 100km away and Peak Resources developing a rare earths mine nearby. Mbeya city is a growing city with good educational and medical facilities, including technical colleges that are expected to be a source of personnel for the operations.

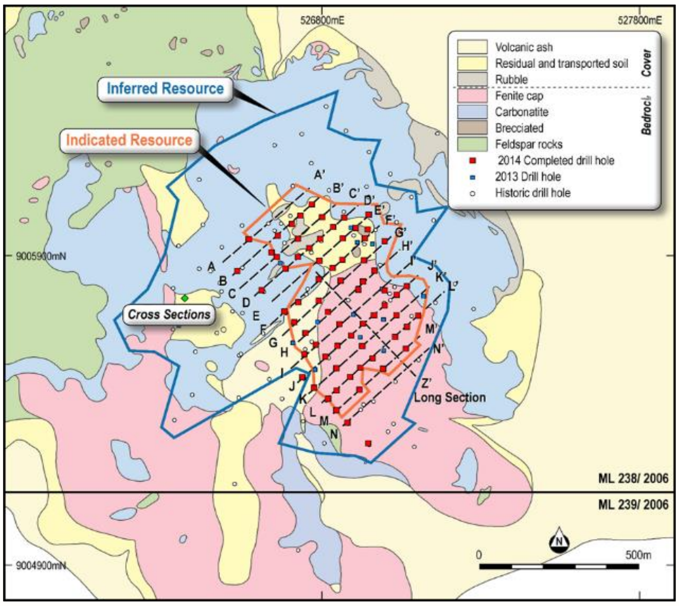


Location and Infrastructure maps (top). Songwe Airport, just 8km from the Project (bottom left). ICC Hotel with Panda Hill in the background (bottom right).

MINERAL RESOURCE UPDATE

A significant Mineral Resource upgrade was finalised in December 2014 by Coffey Mining, with 96Mt @ 0.52% Nb_2O_5 in total Mineral Resources now available. Results of the 57 hole (9,300m) December 2014 infill and expansion drilling program have not yet been included in the Mineral Resource and further extensions are expected in the Mineral Resource update due in Q2 2015. To date only ~40% of the area of the carbonatite has been drill-tested by Cradle to an average depth of 200m, the remainder of the carbonatite is highly prospective, with mineralisation indicted both by historical drilling and field observations by Cradle.

Panda Hill Niobium Mineral Resource - December 2014 **Reported Above a 0.3% Nb_2O_5 Lower Cut-off**			
Combined			
Classification	Million Tonnes	Nb_2O_5 %	Nb_2O_5 Content (kt)
Indicated	41.0	0.54	223
Inferred	55.3	0.51	280
Total	**96.3**	**0.52**	**504**
Primary Carbonatite[1]			
Classification	Million Tonnes	Nb_2O_5 %	Nb_2O_5 Content (kt)
Indicated	35.9	0.54	194
Inferred	52.5	0.51	265
Total	**88.4**	**0.52**	**459**
Weathered Carbonatite[2]			
Classification	Million Tonnes	Nb_2O_5 %	Nb_2O_5 Content (kt)
Indicated	5.1	0.59	30
Inferred	2.8	0.53	15
Total	**7.9**	**0.57**	**45**
Note: Figures have been rounded. [1] Primary Carbonatite is defined as a region of fresh to Moderately Oxidised material dominated by carbonatite lithologies. This material is expected to have a higher metallurgical recovery. [2] Weathered Carbonatite is a region dominated by strongly oxidised material dominated by weathered carbonatite with other mixed lithologies. This material is expected to have a lower recovery than the Primary Carbonatite material.			



Geology and drill plan of the Panda Hill carbonatite (left). Diamond drilling (top right) and fresh carbonatite exposure being collected for the bulk sample near the Angel Zone (bottom right).

CAPITAL COSTS

The construction capital required for a 2Mtpa plant is estimated to be US$158M (excluding pre-production and working capital costs). This includes a 13% overall contingency and is based on the following:

- Contract mining
- Primary crusher with two-stage milling
- Desliming, magnetic separation and niobium flotation
- Concentrate leaching
- Concentrate drying and FeNb converter
- Onsite heavy fuel oil ("HFO") power plant (leased)
- Site access roads
- Tailing storage facility

The capital cost is based upon an estimate date of Q4 2014 with an accuracy of +25%- 15%.

The breakdown of the capital costs are shown below:

Description	**Capex (US$M)***
Mining	4.6
Process Plant	70.8
Reagents / Services	14.4
Infrastructure	34.0
Engineering, Procurement and Construction Management ("EPCM")	16.3
Contingency	17.7
Sub-total	**157.8**
Pre-production / Working Capital	36.7
TOTAL	**194.5**

*Note: figures have been rounded

A conversion from HFO power to grid power is being considered as part of the base case and provision for a further capital expenditure of ~US$30M in Year 5 has been provided for in our analysis.

OPERATING COSTS

The production schedule and mine design has been based around a 30 year LOM, although the total Mineral Resource and pit optimisation results indicate that a 45 year LOM is possible. The operating cost is presented below assuming an HFO onsite power plant for power supply, with conversion to grid power after Year 5. The expected accuracy is +25% - 15% and no contingency allowance has been assumed.

	Years 1 – 10*			**LOM***		
Cost Centre	**US$M's / a**	**US$/t Ore**	**US$/kg Nb**	**US$M's / a**	**US$/t Ore**	**US$/kg Nb**
Mining	31.3	15.67	5.29	30.6	15.38	6.64
Processing & Maintenance	52.3	26.19	8.83	45.7	22.97	9.91
General & Administration	10.8	5.42	1.83	10.8	5.45	2.35
Total Mine Site Cash Costs	**94.5**	**47.28**	**15.95**	**87.1**	**43.80**	**18.90**
Product Transport	2.8	1.42	0.48	2.2	1.11	0.48
Marketing & Insurance	6.2	3.14	1.06	5.1	2.59	1.12
Royalties	7.5	3.80	1.28	5.9	2.97	1.28
Total Cash Cost	**111.2**	**55.64**	**18.77**	**100.4**	**50.47**	**21.78**

*Note: figures have been rounded

POSITIVE FINANCIALS

Cash flow modelling of the 2Mtpa Project indicates high positive financial returns. The modelling has been based upon 100% ownership, a total capex basis with no debt, a long term niobium price of US$44/kg Nb, 30 year LOM, HFO onsite power plant and capital and operating costs as described above. The results are shown below and included both before and after tax NPV (10% discount rate) amounts.

Summary Financial Data	
NPV_{10} (before tax)	US$709M
IRR (before tax)	71.1%
NPV_{10} (after tax)	US$470M
IRR (after tax)	56.5%
EBITDA/annum (av Yrs 1-10)	US$133M
EBITDA/annum (av LOM)	US$103M
Payback Period [3]	1.5 years
Average LOM Production	4,600t Nb (6,800t FeNb)
LOM	30 years

MARKETING AND FINANCE

The Company is actively seeking optimal off-take agreements for the sale of ferroniobium and has recently appointed Claude Dufresne to assist the Company in securing off-take positions. Mr Dufresne is a world recognised expert in the sale and marketing of ferroniobium, and was previously responsible for the sales and marketing of the Niobec ferroniobium through Camet Metallurgy Inc.

Project financing is underway and being coordinated by the Denham-backed Pangea team, the members of whom have a track record of securing finance for African projects.

NEXT STEPS

Work has already commenced on the updated Measured Mineral Resource for use in the DFS, with results expected in Q2 2015.

Based upon results of the PFS, the DFS will consider the option of staging the production such that in the early years a more capital efficient mining operation can be built that will target 5,000t FeNb per annum (approximately 5% of world consumption). The plant will then be expanded in subsequent years to achieve an increased production profile to meet the growing ferroniobium market.

A significant activity of the DFS will be the piloting of the milling and flotation circuit, which will be undertaken at SGS's facility in Lakefield, Canada. A 75 tonne sample has been collected from site for this work and is expected to arrive in Canada in April 2015, with the piloting starting shortly thereafter. The concentrate produced from the pilot campaign will be used as the feed for the concentrate cleaning piloting that will also be carried out at SGS Canada. The "clean" concentrate will be collected and will be available for converter test work if required.

[3] From fully funded

In addition to the new Mineral Resource estimate and pilot plant work, the following studies and activities are also planned for the DFS:

- Further geotechnical studies for the open pit, plant and tailings storage facility areas
- Mining studies to further optimise the pit design based on the new Mineral Resource model
- Basic engineering of the plant
- Optimisation of the tailings storage facility design and layout
- Optimisation of other infrastructure requirements
- Capital and operating cost estimates (Class 3) for the Project
- Project execution plan ("PEP")
- Environmental and Social Impact Assessment ("ESIA") approval process
- Marketing
- Project financing



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DETAILED PFS DOCUMENTATION

INTRODUCTION

Cradle has completed a PFS on its Panda Hill Niobium Project in Tanzania. The Study has focussed on producing on average 4,600tpa (4.6Mkg/annum) niobium as ferroniobium over the LOM with a 2Mtpa concentrator and downstream processing from an open cut mine.

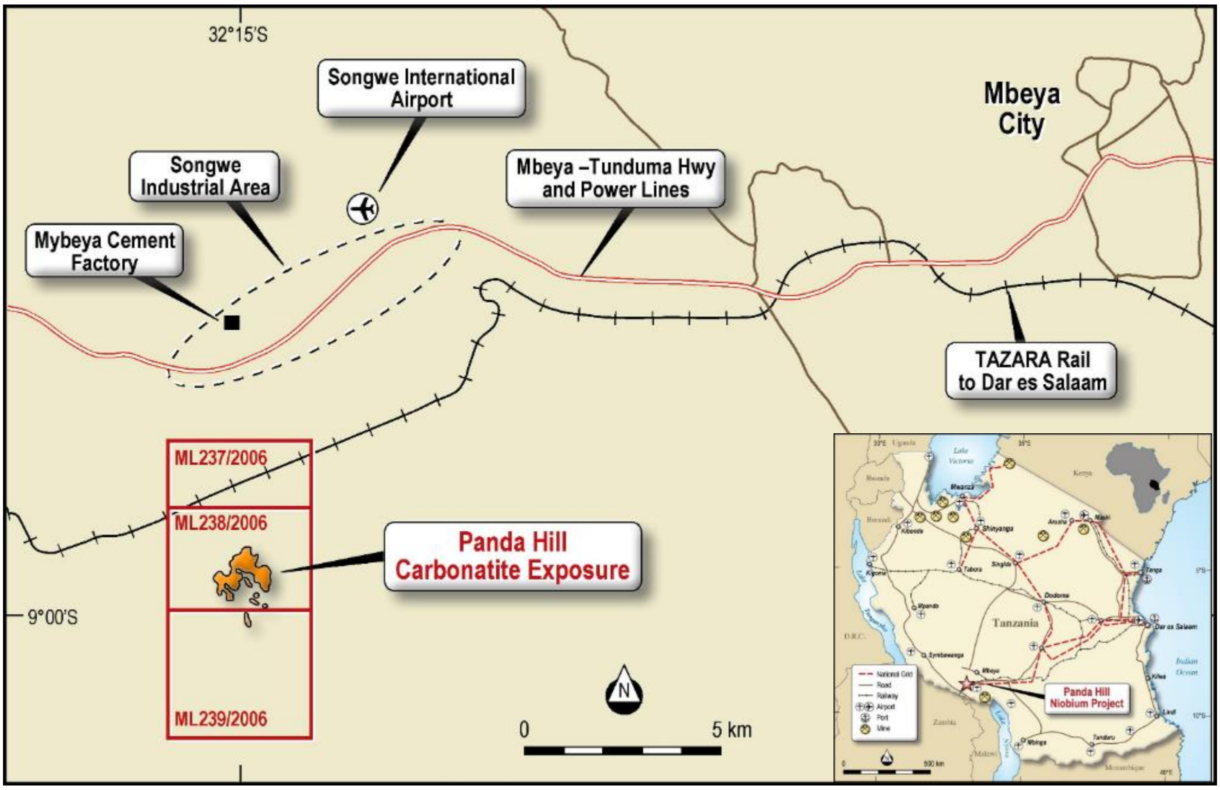


Figure 1 - Location Plan of the Panda Hill Niobium Project

The Project is situated on the Panda Hill carbonatite exposure which is located near the town of Songwe and is only 8km from the newly completed and operational Songwe Airport.

The Panda Hill Niobium Project (Figure 1) is unique in that it is located close to highly developed surrounding infrastructure including the TAZARA Rail line (2km away), the Dar es Salaam - Tunduma Highway (5km away) and major power infrastructure located in Mbeya (26km away).

The Study incorporates the results of technical studies undertaken by Cradle since it acquired ownership rights to the Project in 2013 and represents the first significant work on the niobium deposit of Panda Hill since the 1970s.

Although sufficient information is available Cradle has decided not to declare an Ore Reserve at this stage as it awaits the results of the November/December 2014 infill drilling program to update and finalise the Mineral Resource.

The Study has focused on developing an open cut mine and treating selected material through a milling and single stage flotation process to produce a concentrate suitable for standard ferroniobium production in an onsite converter. Standard grade ferroniobium constitutes ~90% of the world's niobium consumption, with the product sold directly to steel mills where it is used in the production of HSLA steels.

PROJECT DESCRIPTION AND TENEMENTS

The Panda Hill Niobium Project (Figures 1 and 2) is located in the Mbeya region in south western Tanzania approximately 650km west of the capital Dar es Salaam. The industrial city of Mbeya is situated only 26km from the project area and will be a significant service and logistics centre for the Project. Mbeya has a population of approximately 280,000 people, located on the main highway to the capital Dar es Salaam and has a newly constructed airport with regular domestic flights from Dar es Salaam and plans for regional expansion.

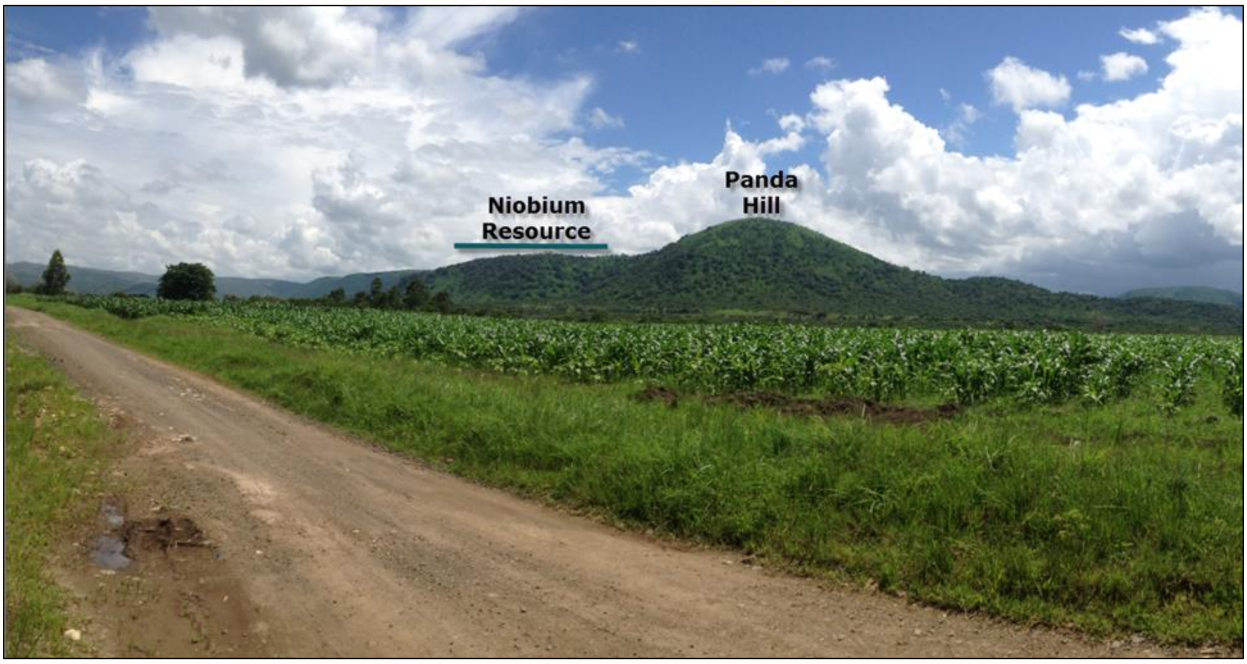


Figure 2 - Panda Hill and surrounds

The Panda Hill Niobium Project is located on three Mining Licences (ML237/2006, 238/2006 and 239/2006) granted to Panda Hill Mines Ltd on 16 November 2006 and covering a total area of approximately 22.1 km^2. Title of these licences was transferred to RECB Limited ("RECB") on 18 December 2012.

Panda Hill Mining Pty Ltd ("PHM"), a wholly owned subsidiary of Cradle, obtained an option to acquire the licences in May 2012 and subsequently purchased a 49% shareholding in RECB with a further option to purchase 1% (which was exercised in 2014) and an additional right to acquire the remaining 50% of RECB over a four year period.

In June 2014 Cradle reached an agreement with Tremont Investments Limited (backed by Denham Capital) ("Tremont") to fund the Project to DFS and beyond. Tremont will earn up to a 50% in the Project for a consideration of up to US$20M. To date Tremont has acquired a 25% stake in the Project through funding of US$10M. The corporate structure is shown below in Figure 3.

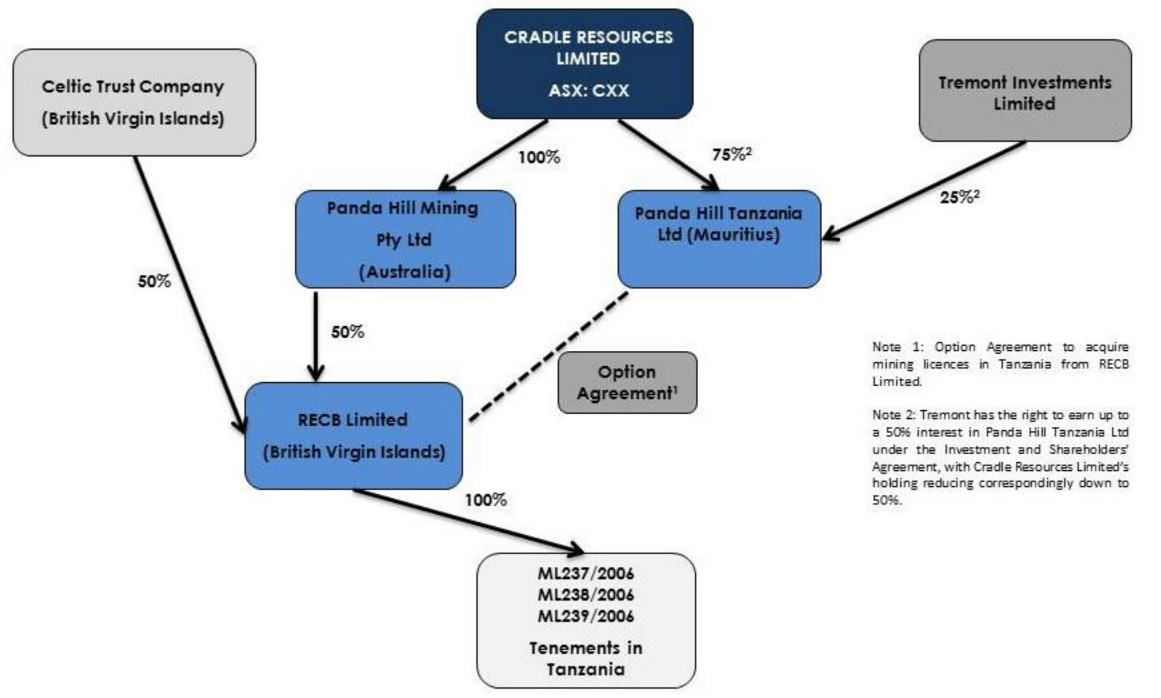


Figure 3 – Panda Hill Corporate Structure

GEOLOGY AND EXPLORATION

Exploration History

The Panda Hill carbonatite intrusion has been subject to multiple phases of exploration work since the 1950s. This work has targeted the niobium and phosphate endowment of the deposit. From 1953 to 1965, the Geological Survey of Tanzania ("GST") undertook mapping, diamond drilling and trenching (17 DDH for 1,405m) to assess the niobium and phosphate potential of the deposit.

From 1954 to 1963, the Mbeya Exploration Company ("MBEXCO") joint venture was formed between N. V. Billiton Maatschappij and Colonial Development Corporation, London. MBEXCO drilled 66 diamond holes for 3,708m, excavated numerous pits, sunk two shafts and undertook trial mining and constructed a trial gravity and flotation plant on site. Concentrate from site was sent to Holland for further processing, with positive early metallurgical test work results noted.

From 1978 to 1980 a Yugoslavian State Enterprise ("RUDIS") undertook a joint study primarily on the phosphate endowment in collaboration with the Tanzanian Mining Industrial Association and State Mining Corporation ("STAMICO"). This work included mapping, diamond drilling and pitting (13 diamond holes for 1,306m).

Cradle commenced exploration work on the Project in 2013 and has drilled 137 holes (RC and DDH) for 20,724m to December 2014. The bulk of the drilling has been on a 50m x 50m pattern with broader lines of up to 100m x 100m. Cradle also undertook extensive geological mapping campaigns over the carbonatite intrusion and has undertaken a magnetic and radiometric survey over the broader region.

Geology

The Panda Hill carbonatite (Figure 4) is a mid-Cretaceous volcanic intrusion which has intruded into gneisses and amphibolites of the NE-SE trending mobile belt. It forms a steeply dipping, near-circular plug of approximately 1.5km diameter and is partly covered by fenitised country rocks and residual soil material. The fenite forms a "cap" or roof over the south of the carbonatite complex, and is in turn overlain by residual and transported soils. Volcanic ash over part of the complex suggests a later stage of volcanic activity.

It is apparent that portions of fenite, ash and soil cover are underlain by carbonatite and these areas are only lightly explored.

In the main exposed portion of the carbonatite evidence supports three stages of carbonatite activity outwards from the centre of the plug. An early-stage calcite carbonatite forms the core, while intermediate and late-stage carbonatites, composed of more magnesium-rich and iron-rich carbonatites, form the outer parts of the plug. Later stage apatite-magnetite rich rocks and ferro-carbonatite dykes are also found in the complex. Fenitisation of the pre-existing gneisses led to the development of potassium-rich rocks containing K-feldspar and phlogopite.

The Sovite carbonatite from Panda Hill is composed mainly of calcite, which forms an average of 60 - 75% by volume. The fresh Sovite carbonatite may contain up to 5% apatite, with pyrochlore, magnetite, phlogopite and quartz. Dolomite-rich carbonatites (Rauhaugite) and ankerite/siderite-rich carbonatites (Beforesite) are also present and can be mineralised.

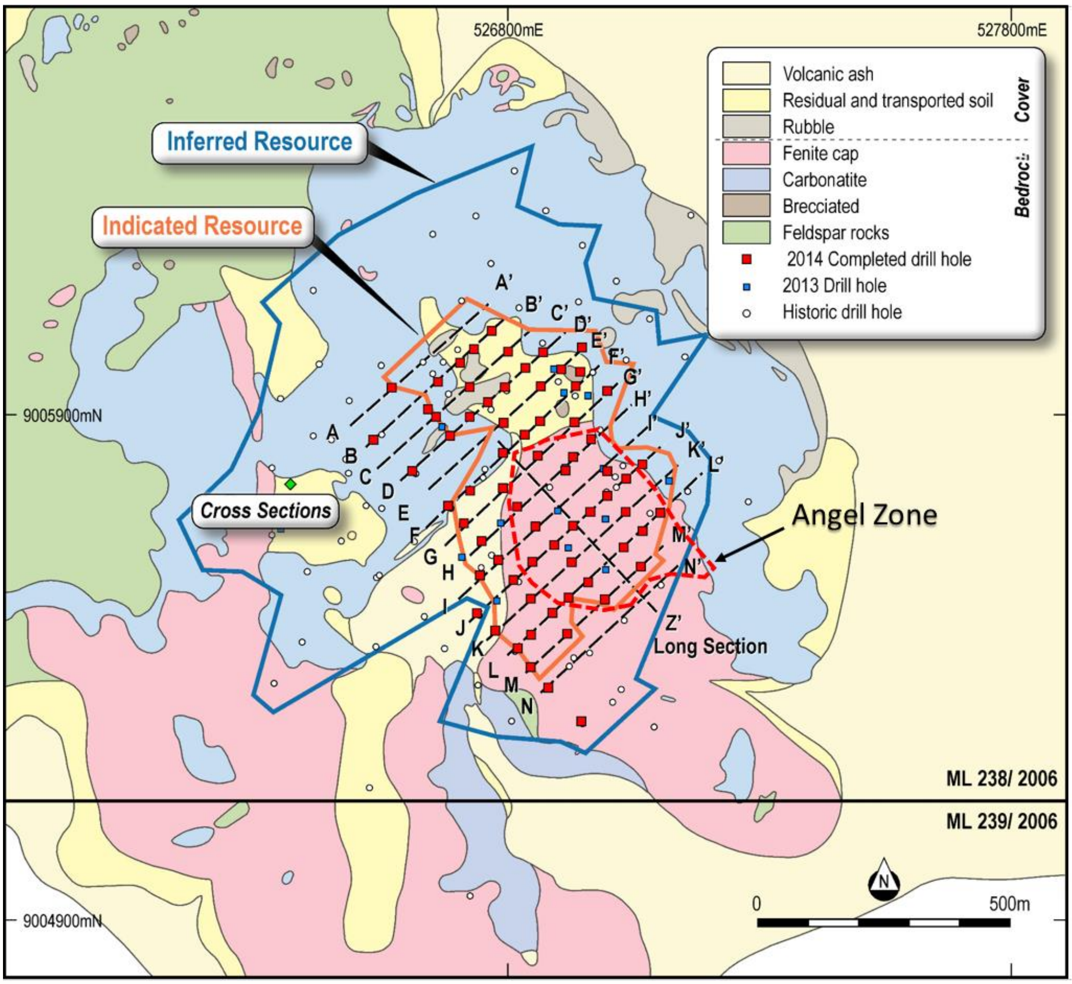


Figure 4 – Geology plan showing the December 2014 Mineral Resource regions and drilled section lines. The regions in blue (carbonatite) and pink (Fenite Cap) are both highly prospective with field mapping showing carbonatite and magnetite-carbonatite outcrop contained within many of these areas. Cradle has only drill tested approximately 40% of the area of the carbonatite, with the remaining areas having mineralisation indicated by historical drilling.

The bulk of the Panda Hill niobium mineralisation is found within pyrochlore and lesser columbite. The bulk of the known mineralisation is within primary (i.e. fresh to moderately weathered) carbonatite lithologies, with Nb_2O_5 grades typically ranging from 0.1% to 1%. Higher-grade material is related to magnetite-rich bands and flow-banding (schlieren) within the carbonatite. Grades within the magnetite-carbonatite are up to 3% Nb_2O_5. The weathered carbonatite lithologies (elluvial soils and residual clays) can also contain up to 3% Nb_2O_5.

Mineral Resource

The Mineral Resource estimation was undertaken by independent mining consultants, Coffey Mining based in Perth, Western Australia and was reported in accordance to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code 2012 Edition (JORC 2012).

The Mineral Resource update utilised both historical drilling (38 DDH for 2,656m) and drilling undertaken by Cradle up to October 2014 (85 holes for 10,935m). The 2014 Mineral Resource was estimated using Multiple Indicator Kriging ("MIK") on 2m composites with a 25m by 25m by 5m (X by Y by Z) panel to generate a recoverable estimate emulating a selective mining unit ("SMU") including mining dilution of 6.25m x 12.5m x 5m.

Drill holes are spaced at 50m to 100m centres on 50m spaced drilling sections oriented approximately NE-SW. The majority of drill holes are angled with dips of -60° towards 046°, targeting the SW dipping carbonatites and the pyrochlore rich flow banding entrained within the carbonatites. Typical cross-sections showing the drilling are presented in Figures 5 to 8.

Assaying for Nb_2O_5 was by Borate fusion XRF carried out by SGS in Johannesburg. This method also provides assays for a multi-element suite including Fe_2O_3, SiO_2, CaO, TiO_2 as well as other major elements. Drill holes were sampled in their entirety except where there was no sample due to intersection of cavities. Diamond core was sampled on geological intervals, generally of 1m length. RC holes were sampled as 2m composites.

Quality Assurance Quality Assumptions ("QAQC") data was supplied with the data and consisted of results for certified standards, blanks, field duplicates, coarse reject duplicates and umpire duplicates from the 2013 and 2014 drilling programs. The Panda Hill database contains approximately 2,700 calliper method bulk density determinations collected from the diamond holes drilled in 2013 and 2014.

A relatively broad mineralisation envelope wireframe was defined for the Nb_2O_5 mineralisation for use in the MIK modelling (Zone code 100). A nominal 0.2% Nb_2O_5 lower cut-off was used to define the mineralisation. Wireframe surfaces were created to mark the divisions between mostly completely oxidised material, transitional material, and mostly fresh material. All wireframes were snapped to drill holes.

The updated total Mineral Resource (Weathered and Primary Carbonatite) contained 96.3Mt at 0.52% Nb_2O_5 for 504kt of contained Nb_2O_5 reported at a 0.3% Nb_2O_5 cut off, and is based predominantly on new drilling undertaken in 2013 and 2014. The 2014 Mineral Resource is summarised below in Table 1 by weathering type and the area of the Mineral Resource is shown in Figure 4 above.

Table 1 - Panda Hill Niobium Mineral Resource - December 2014 Reported Above a 0.3% Nb_2O_5 Lower Cut-off			
Combined			
Classification	Million Tonnes	Nb_2O_5 %	Nb_2O_5 Content (kt)
Indicated	41.0	0.54	223
Inferred	55.3	0.51	280
Total	**96.3**	**0.52**	**504**
Primary Carbonatite[1]			
Classification	Million Tonnes	Nb_2O_5 %	Nb_2O_5 Content (kt)
Indicated	35.9	0.54	194
Inferred	52.5	0.51	265
Total	**88.4**	**0.52**	**459**
Weathered Carbonatite[2]			
Classification	Million Tonnes	Nb_2O_5 %	Nb_2O_5 Content (kt)
Indicated	5.1	0.59	30
Inferred	2.8	0.53	15
Total	**7.9**	**0.57**	**45**

Note: Figures have been rounded. [1] Primary Carbonatite is defined as a region of fresh to Moderately Oxidised material dominated by carbonatite lithologies. This material is expected to have a higher metallurgical recovery. [2] Weathered Carbonatite is a region dominated by strongly oxidised material dominated by weathered carbonatite with other mixed lithologies. This material is expected to have a lower recovery than the Primary carbonatite material.

Mineral Resource Notes:

- The Panda Hill Niobium Project is located in south-western Tanzania, approximated 26km south-west of the town of Mbeya.
- Niobium mineralisation occurs in pyrochlore (and minor columbite) and is hosted by the Panda Hill carbonatite complex.
- The deposit is defined by diamond and RC drill holes on a nominal 50-100m spaced drilling on NE-SW oriented grid lines. The majority of drill holes are angled at -60° to 046°.
- Validated data from 123 drill holes has been used in the resource estimate. 51 of these are RC drill holes drilled by Cradle in 2014, 34 are diamond drill holes drilled by Cradle in 2013 and 2014, and the remaining 38 are historic diamond drill holes. Note that 64 historic drill holes were deliberately removed from the database as they have been replaced by new drilling or are outside of the resource area. Recent drilling from Cradle makes up approximately 80% of the resource drillhole data.
- Drillhole data was used to create a 3D wireframe of mineralisation utilising a nominal 0.2% Nb_2O_5 lower cut-off that was appropriate for MIK estimation.
- Geological logging information was used to create 3D surfaces defining three zones of oxidation: mostly weathered (oxide), moderately weathered (transitional), and mostly fresh (fresh).
- Sample preparation was carried out by SGS in Mwanza, Tanzania. Samples were then sent to SGS in Johannesburg for assay by XRF Borate fusion.
- QAQC consists of the insertion of certified standards and blanks into the sampling stream. Field duplicates were collected from the RC drill holes and coarse reject duplicates were collected from the diamond drill holes. Selected samples were also sent for analysis at Genalysis laboratory in Perth as an umpire check. No potential problems were highlighted by the QAQC results, and the data is considered to be of sufficient standard for use in the Resource estimation.
- Following flagging for the zones and domains, drillhole data was composited to 2m downhole intervals.
- Statistical analyses were completed on the raw sample data and the 2m composite data. While no top cut is used in the MIK estimation, a top cut of 3% Nb_2O_5 was applied to the Nb_2O_5 composites used for variography and for geostatistical purposes.
- Grade estimates were generated for parent blocks of size 25m(X) by 25m(Y) by 5m(Z) with sub-blocks of 5m(X) by 5m(Y) by 1m (Z). The estimation method was Multiple Indicator Kriging (MIK). MIK grade estimation with change of support has been applied to produce 'recoverable' Nb_2O_5 estimates for a range of cutoff grades targeting a selective mining unit (SMU) of 6.25m x 12.5m x 5m.
- In situ dry bulk densities were assigned on the basis of measurements collect for the 2013 and 2014 drill core using the calliper method. After statistical review of the 2793 density measurements, bulk density values have been applied to the block model as follows: for waste material values of 2.33t/m^3, 2.53 t/m^3 and 2.74t/m^3 have been applied to oxide, moderately oxide and fresh domains respectively. For mineralised material bulk density values of 2.15t/m^3, 2.53t/m^3 and 2.68t/m^3 have been applies to oxide, moderately oxide and fresh domains respectively. The bulk density values for mineralisation incorporate a 6% void factor for oxide material, and a 3% void factor for transitional and fresh material resulting from statistical estimates of recorded voids/cavities.

Mineral Resource classification was developed from the confidence levels of key criteria including drilling methods, geological understanding and interpretation, sampling quality, data density and location, grade estimation and quality of the estimates.

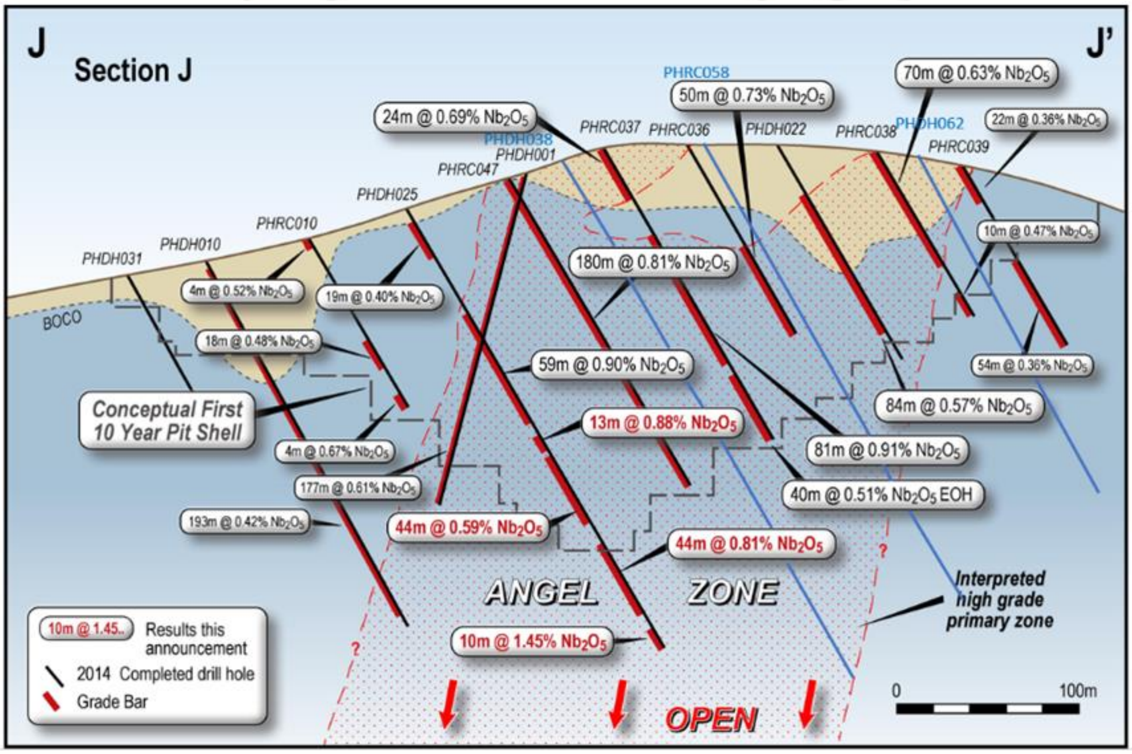


Figure 5 – Section J with 2014 drill holes (thick black lines) showing returned results and newly drilled holes (blue lines)

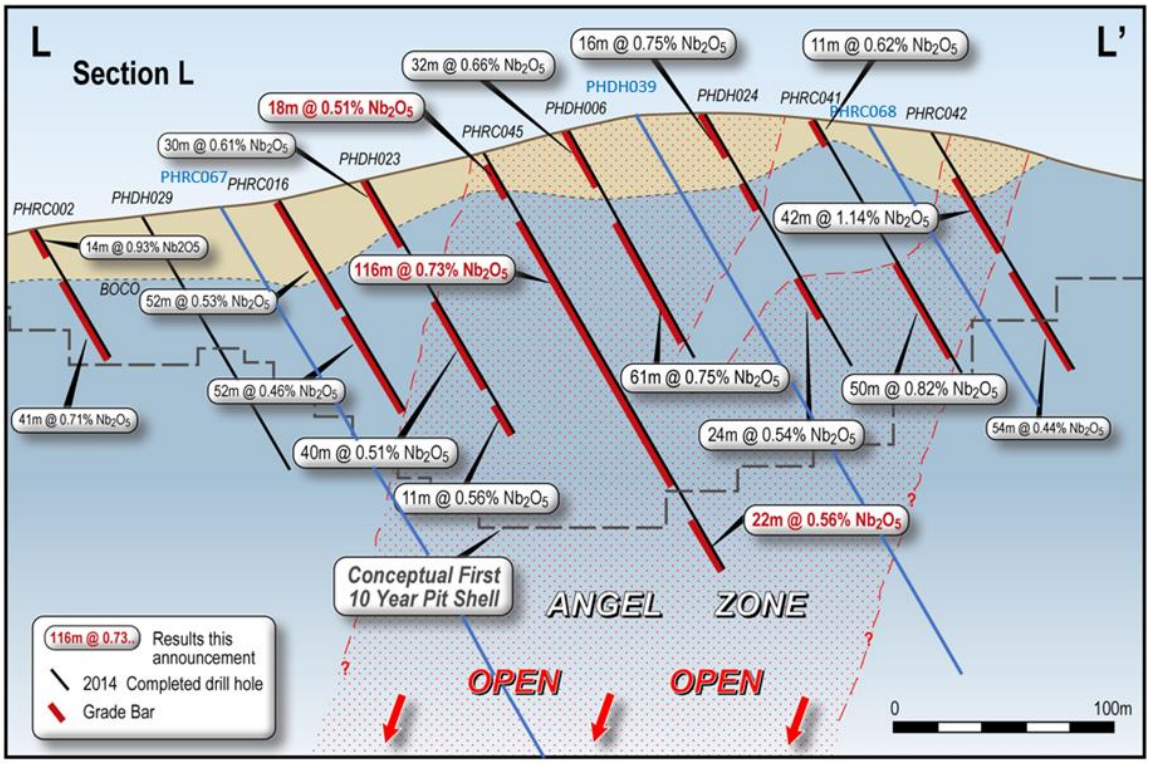


Figure 6 – Section L with 2014 drill holes (thick black lines) showing returned results and newly drilled holes (blue lines)

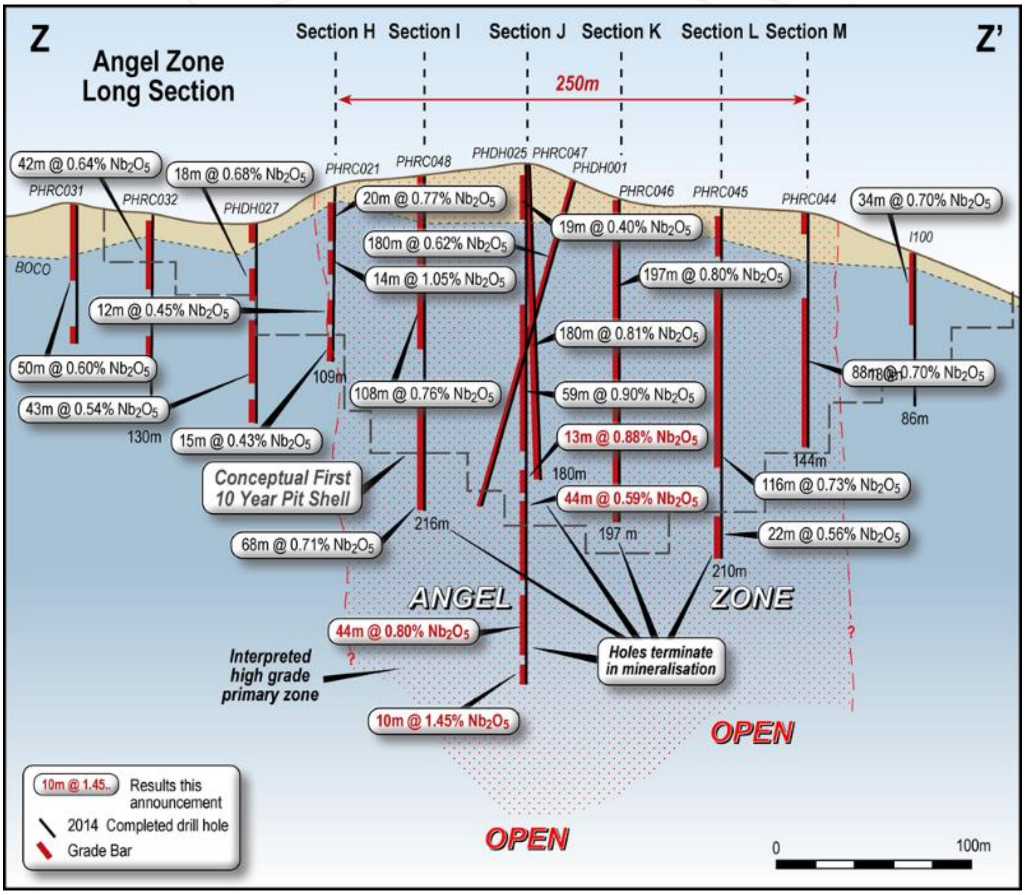


Figure 7 – Long-Section showing projection of the Angel Zone

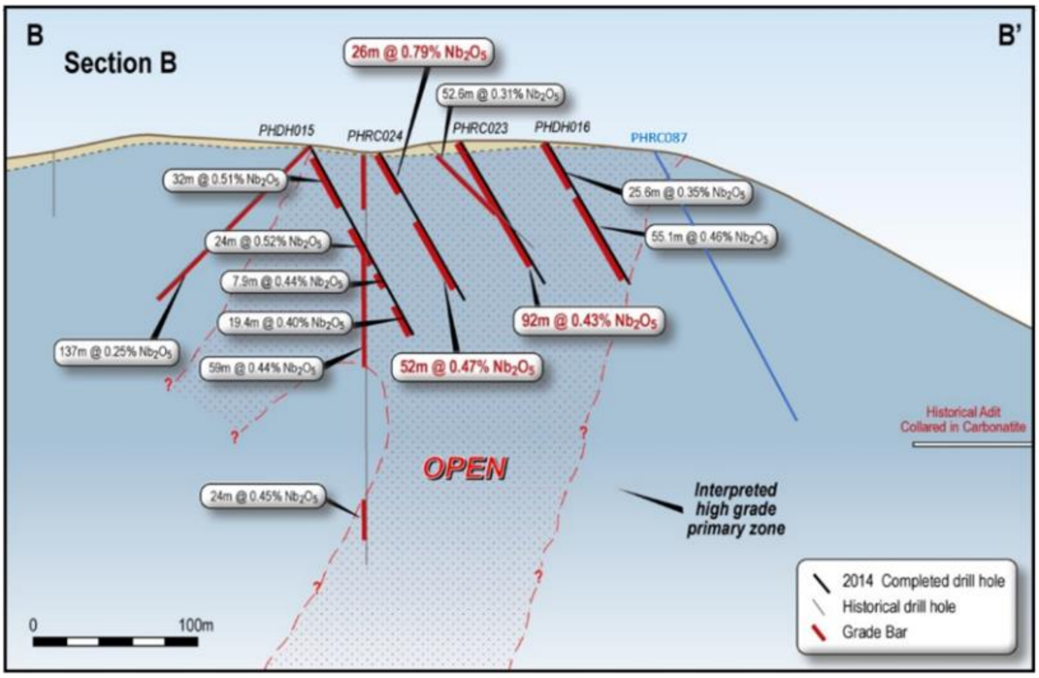


Figure 8: Section B in northern part of the drilling area showing 2014 and historical drill holes with intercepts (grey lines and text) and newly drilled holes (blue lines)

Mining

The mining study assumed development of the Panda Hill deposit by conventional open cut mining based on drill, blast, load and haul using a typical medium fleet arrangement of two 120 tonne excavator and eight to ten 90 tonne haul trucks (e.g. CAT 777) – Figure 9. Contract mining is assumed and mining costs have been based on proposals received by potential contractors.

Figure 9 – Examples of typical mining equipment that may be used – A Hitachi EX1200-6 110t excavator (left hand side) and a CAT 777G 90t mining truck (right hand side).

The mine design was guided by a sequence of Whittle optimised pit shells based on Coffey's MIK Mineral Resource block model and included the geo-metallurgical material interpretation. The embedded geomet model allowed selective mine planning to occur with the focus on selecting the carbonatite materials that are best treated in the selected process. The mineralised materials that have a lower than optimal metallurgical recovery (e.g. mineralised fenites, clays etc.), will be stockpiled in an Interim Stockpile ("ISP") for future treatment, potentially in a gravity circuit prior to feeding to the flotation process. This processing option has been excluded from the current Study economics, but does represent a future upside for the Project.

Open pit optimisations were based on:

- Niobium price: US$44.00/kg Nb
- Processing costs: US$9.29 to US$10.10/kg Nb (depending on material type)
- Processing recoveries: 52% to 68% (depending on material type)
- Pit slope angles: Bench-stack pit slope angles of 44^{o} and 48^{o} were derived for weathered material domains and 52^{o} and 54^{o} for fresh material domains

The production scheduling work was carried out such that for the first 5 years of operation the Run of Mine ("RoM") will be sourced solely from Indicated Mineral Resource material, any Inferred Mineral Resource or low grade material will be stockpiled. After the first 5 years the RoM will consist of a combination of Indicated Mineral Resource and Inferred Mineral Resource material, including stockpiled Inferred Mineral Resource material that meets the minimum grade requirements. A RoM grade of 0.7% Nb_2O_5 was targeted for the first 10 years of operation.

The impact of targeting only Indicated Mineral Resource material and ensuring higher grade mill feed in the first 10 years of operation, along with the decision to treat only carbonatite material types has pushed up the stripping ratio from the Scoping Study. This results in higher mining costs, but the additional revenue generated from this strategy exceeds the added costs by a significant factor.

Cautionary Statement concerning Production Target Results including Inferred Resources

Cradle advises that the PFS results and production targets reflected in this announcement are preliminary in nature as conclusions are drawn partly from Indicated Mineral Resources and partly from Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated or Measured Mineral Resources or that the production target itself will be realised.

The results of the mining study are summarised below in Table 2.

*Table 2 – Summary LOM Mining Data**

Pushback	Total	Waste and ISP	Stripping	Indicated Inventory	Nb_2O_5 Grade	Inferred Inventory	Nb_2O_5 Grade	Total Inventory	Nb_2O_5 Grade
	kilo tonnes	kilo tonnes	Ratio	kilo tonnes	%	kilo tonnes	%	kilo tonnes	%
1 (Yrs 1-6)	34,794	23,506	2.1	10,012	0.72	1,276	0.72	11,288	0.72
2 (Yrs 6-9)	27,548	21,258	3.4	3,973	0.67	2,317	0.67	6,290	0.67
3 (Yrs 9-10)	7,342	5,572	3.1	1,281	0.59	488	0.65	1,770	0.60
4E (Yrs 10-20)	26,844	16,858	1.7	2,127	0.47	7,859	0.53	9,986	0.52
4W (Yrs 10-20)	22,165	13,767	1.6	-	-	8,398	0.49	8,398	0.49
5 (Yrs 21-30)	84,579	61,532	2.7	4,228	0.41	18,819	0.44	23,047	0.43
Total All Pit Designs	**203,272**	**142,494**	**2.3**	**21,621**	**0.62**	**39,157**	**0.49**	**60,778**	**0.54**

*Note: figures have been rounded

The Study has not included the results of the November and December 2014 drilling programs, and there is potential for additional Mineral Resources to be defined from this drilling.

Figure 10 shows a schematic of the optimised 10Mt pit and the final 60Mt pit shell outline (red).

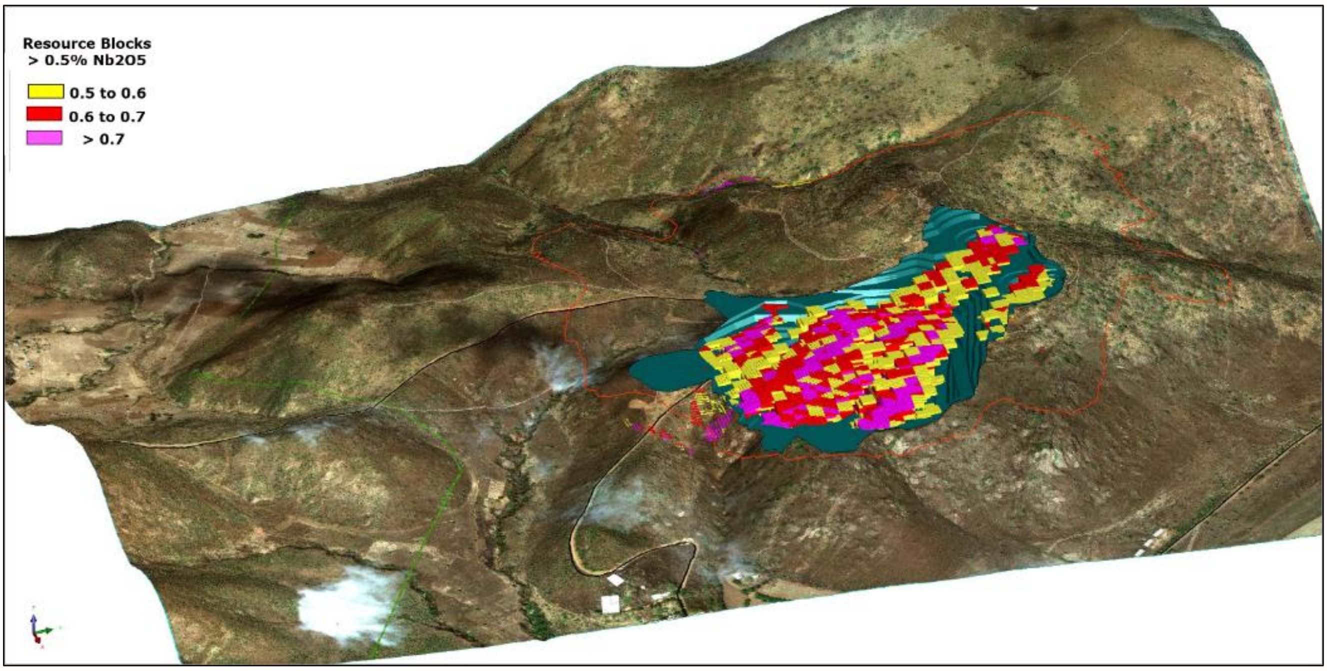


Figure 10 – Schematic of First 5 Year Pit Design (green) with the LOM outline (red outline) and Mineral Resource blocks

Processing

The first phase of the PFS focused on an Option Study which considered a variety of process options including the base case from the Scoping Study (two-stage flotation), a direct flotation process and a gravity upgrade prior to flotation concept. A comprehensive program of test work was undertaken for each flowsheet incorporating each of the major material types from the deposit. Using the criteria of cost, process performance, technical risk and perceived operability the review concluded that the direct flotation process was the preferred process option for the Project.

The direct flotation flowsheet selected is based on upfront crushing followed by a two-stage SAG-Ball mill circuit. The milled product is deslimed before entering the flotation circuit. This circuit is a standard rougher scavenger circuit with up to 5 stages of concentrate cleaning. The flotation chemistry is based on an amine system of collectors with acid for pH control in the cleaners to reject silicate. The flotation concentrate, although high grade (~45% Nb_2O_5), does contain some impurities which must be removed prior to the ferroniobium converter. This is done through a two-stage leach process which removes the phosphates and sulphur, and also has the added advantage of reducing the final silicate grade if required. The final leach residue is dried and fed to a DC furnace for standard grade ferroniobium production using aluminium as a reductant. The final ferroniobium product is then crushed and packaged to meet the specific customer specifications. The proposed flowsheet is shown schematically in Figure 11

The process flowsheet described is similar to the circuits of the current niobium operations (Catalão, CBMM and Niobec), with the flotation regime most similar to Niobec which has a similar geology and mineralogy to the Panda Hill primary material. The ferroniobium converter is based on some of the concepts from the final stage of the CBMM pyrometallurgical circuit.

The milling, flotation and leach circuits have been tested on all the major material types and the plant design is based upon treating the main carbonatite lithologies. This flowsheet has been shown to successfully treat, under similar process conditions, the range of carbonatites identified in the deposit (oxidised to fresh, including magnetite carbonatites), although with some variation in recovery and grade and reagent addition rates.

The test work to date has been undertaken by SGS Canada and has consisted of a program of open circuit milling and flotation tests (~165), backed up by 17 locked cycle tests, a summary of which are shown in Table 3 below. This test work clearly demonstrated the robustness of the circuit for treating the carbonatite materials with recoveries ranging from 52% for the strongly oxidised materials through to over 70% for the fresh clean sovite material. A strong relationship between metallurgical recoveries and oxidation/weathering profile was demonstrated as part of the test work and this algorithm will be further investigated as part of the variability program such that grade and recovery predictive models can be generated.

Table 3 – Summary of locked cycle tests

Test #	Zone Represented	Flotation Circuit Product	Conc Grade % Nb_2O_5	% Recovery Nb_2O_5
Fresh Sovite LCT6-CompE	Primary / Fresh Zone	Nb_2O_5 Final Concentrate	54.2	70.7
Fresh Carbonatite LCT2-CompB	Primary / Fresh Zone	Nb_2O_5 Final Concentrate	43.6	65.6
Weakly Oxidised Carbonatite FC-LCT3	Primary / Fresh Zone	Nb_2O_5 Final Concentrate	47.5	61.0
Moderately Oxidised Carbonatite MOC-LCT1	Transition / Mod Oxidised	Nb_2O_5 Final Concentrate	44.7	55.2
Strongly Oxidised Carbonatite LCT4-CompD	Weathered / Strongly Oxidised Zone	Nb_2O_5 Final Concentrate	41.4	52.0
Strongly Oxidised Carbonatite OC-LCT1	Weathered / Strongly Oxidised Zone	Nb_2O_5 Final Concentrate	41.7	51.6

Additional test work included leaching tests on the flotation concentrate which showed the phosphate, sulphur and silicate specification for the ferroniobium process could be met (see Table 4 below). The required leaching process consists of a two-stage leach process with an acid leach followed by an alkaline leach, both of which occur under atmospheric conditions. Under these conditions no niobium losses occur as the pyrochlore and columbite minerals are refractory. No pyrometallurgical test work has been undertaken at this stage however a recovery of 97% has also been assumed for the converter based on the experience of specialist consultants familiar with the process.

Table 4 – Summary of leaching tests on flotation concentrate

Test #	Leach Feed			Leach Residue		
	%Nb_2O_5	%SiO_2	%P_2O_5	%Nb_2O_5	%SiO_2[4]	%P_2O_5[5]
CL2 (fresh carbonatite)	49.6	7.2	0.28	52.6	2.61	0.07
CL9 (oxidised carbonatite)	49.5	11.3	0.29	57.5	1.05	0.05
CL10 (strongly oxidised carbonatite)	36.5	21.9	0.38	53.5	2.17	0.06

[4] Target 3.5% SiO_2

[5] Target 0.15% P_2O_5

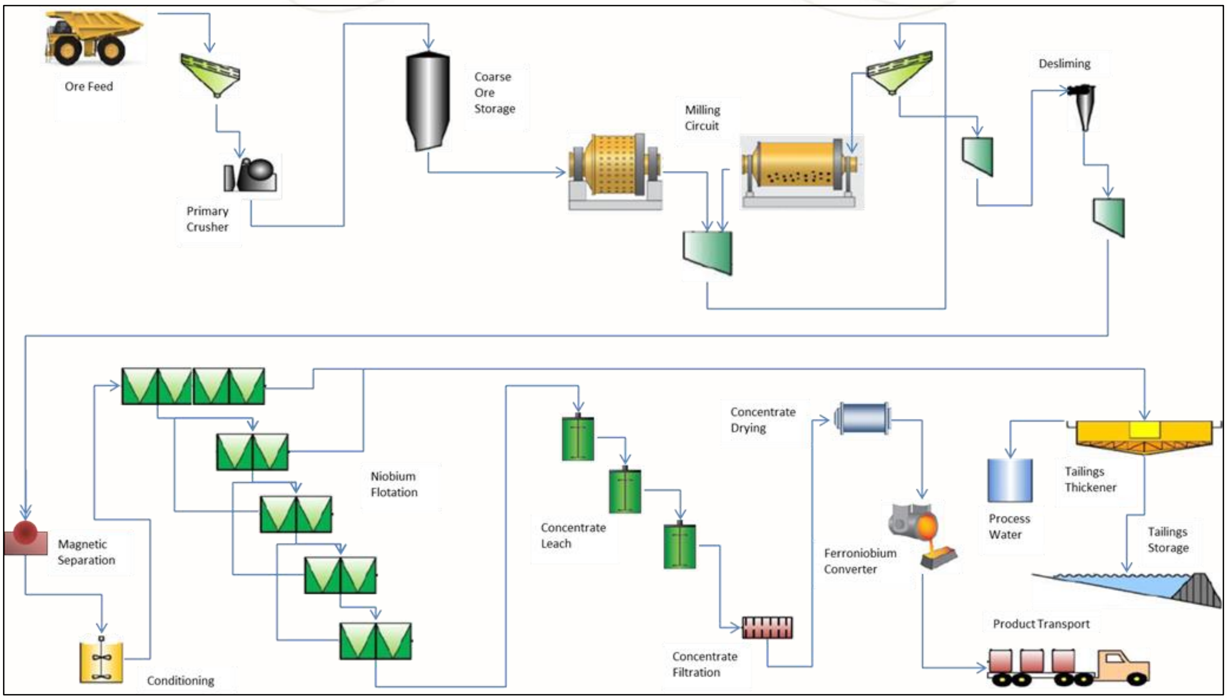


Figure 11 – Schematic of proposed flowsheet

A summary of the metallurgical information derived from process design and the production scheduling is shown in Table 5 below.

Table 5 – Summary Metallurgical Data

Period	Mill Throughput	% Fresh Carb	Av Feed Grade	Av Nb Recovery	Av FeNb Prod
Years 1-10	2Mtpa	47%	0.68% Nb_2O_5	63%	8,390kt
LOM	2Mtpa	51%	0.54% Nb_2O_5	62%	6,780kt

Infrastructure

Infrastructure within the local area of the Project is already well established and as such the project development will only require significant investment in a tailings storage facility and some expenditure on water supply, road upgrades and camp/accommodation. The regional infrastructure is shown in Figure 12 below.

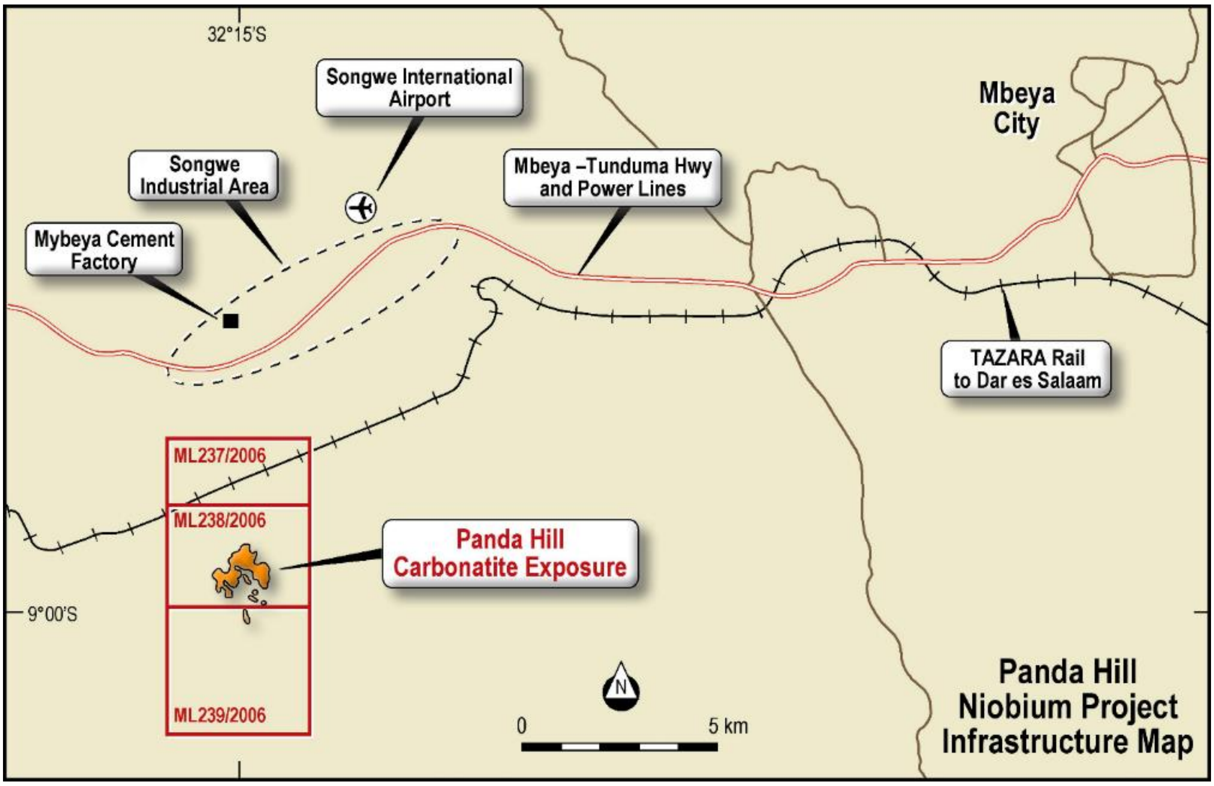


Figure 12 – Location of the Project and surrounding infrastructure

Access – The project site is accessible via the Dar es Salaam – Tunduma Highway which runs to within approximately 5km of the site. An existing unsealed road accesses the project area and surrounding villages. A new 6.6km mine road will be built from the highway to the plant. In addition a new 6km diversion road around the perimeter of the mine will be built to allow continued public travel between the villages in the south and the highway.

Tailings storage facility ("TSF") – The TSF will be constructed in stages with the embankment height raised by downstream lifts over the LOM. The maximum height of the starter wall taken from the downstream toe of the wall to the crest is 12.8m. The capacity for the 12.8m starter wall basin, assuming 2Mtpa from immediate start up, is 12 months. The TSF will consist of one paddock with the preferred location to the east of the proposed plant site/pit where the local topography minimises the total embankment height over the LOM.

Water – Water demand for the Project is anticipated to average 0.7Mm^3 per annum over the LOM (with a potential maximum of 1.1Mm^3 required during an extreme dry period). The surface water and ground water studies in the area have identified the local Songwe River as the most likely source of water for the Project with a possible option of some ground water available from aquifers to the north of the tenements. The opportunity for early construction of the TSF prior to the wet season will also allow it to act as a water collection area for the start of operations. All three water sources; the Songwe River, boreholes and water harvesting from the TSF, are likely to be used to supply water during various phases of the Project.

Power – Power will be provided to plant and other infrastructure from an onsite HFO power plant. The base case assumes leasing the power plant and is based on discussions held with in country providers. The opportunity to connect to the national grid by constructing a new transmission line that will connect the site to the Mbeya 220kV substation was investigated. The reliability of power on the 220kV distribution network has been shown to be very high, but there were concerns around the timing for the installation and from a risk perspective the HFO plant is more attractive. The connection to the national grid is then considered as an upgrade to the plant during the operation phase. This was assumed to occur in Year 5 in our analysis. Total installed capacity for the plant is anticipated to be

17.6MW with an operating load of 10.9MW. Energy costs are US$0.213/kWh, based on current fuel prices, with a reduction to US$0.115 when the connection to the grid occurs.

The conceptual site layout is shown in Figure 13 below.

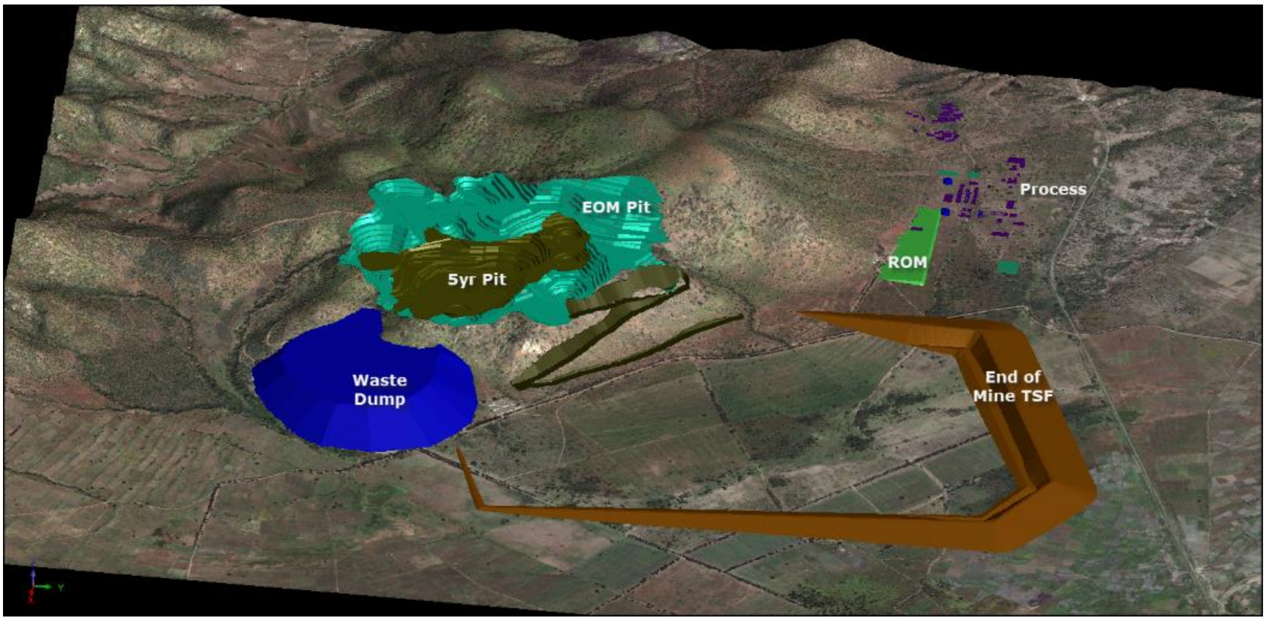


Figure 13 – Site layout

Environmental and Social

As part of the initial development work undertaken by the previous owners an Environmental Impact Assessment Certificate ("EIAC") for Panda Hill was issued in June 2005 and based on this a mining licence was issued to Panda Hill Mines Ltd. Although the mining licence is still in effect, a new EIAC is required as no development at the mine site was undertaken in the three years after the issuing of the certificate. As such a new Terms of Reference ("ToR") and ESIA Scoping document was prepared as part of the Scoping Study completed last year. The ToR were accepted by the National Environmental Management Council ("NEMC") in late 2013.

As part of the PFS scope the baseline studies for the ESIA were initiated with the dry season study completed in February 2015 and the planning for the wet season currently underway. The current planning indicates that the ESIA documentation will be ready for submission to the NEMC by Q2 2015, and with the approval process taking 90 days to complete, the EIAC should be issued in Q3 2015.

Capital Costs

The capital cost estimates for the Project are shown below in Table 6. The costs are presented in US dollars as at the fourth quarter 2014 (Q4 2014) to an accuracy of -15% +25%. The estimate was prepared by MDM Engineering with input from SLR Consulting for the tailings and water facilities and SRK Consulting for mining. The costs include an average weighted contingency of 13%. For comparison the cost estimate from the Scoping Study has also been included.

*Table 6 – Capital Cost Estimate (Q4, 2014)**

Main Area	PFS US$M	Scoping Study US$M
Mining	4.6	0
Plant	70.8	71.9
Reagents & Plant Services	14.4	13.7
Infrastructure	33.9	35.1
Management Costs	16.3	15.6
Subtotal	**140.1**	**136.4**
Project Contingency	17.7	29.9
Project Escalation	0	0
Subtotal	**17.7**	**29.9**
Total	**157.9**	**166.3**

*Note: figures have been rounded

Pre-production and working capital costs are described below in Table 7.

*Table 7 – Pre-Production & Working Capital Estimate (Q4, 2014)**

Main Area	PFS US$M	Scoping Study US$M
First Fills	3.1	4.8
Spares	1.8	1.6
Operations	4.7	-
Owners	1.9	3.2
Preproduction	12.0	3.5
Services	8.9	-
Working Capital (average)	4.1	-
Total	**36.7**	**13.3**

*Note: figures have been rounded

Sustaining capital costs are described below in Table 8.

*Table 8 – Annual Sustaining Cost Estimate (Q4, 2014)**

Main Area	PFS US$M	Scoping Study US$M
Tailings dam lifts	4.7	3.0
Plant	3.0	-
Plant Mobile equipment	0.4	-
Other	0.4	-
Total	**8.6**	**3.0**

*Note: figures have been rounded

Initial execution capital is in line with that determined in the Scoping Study, however costs associated with pre-production are significantly higher as the more detailed planning and new costs associated with the operations team, temporary facility requirements and working capital have been realised. Some of these costs have been negated by a reduced contingency but the total PFS costs (US$193.8M) are higher than those of the scoping Study (US$179.7M). One of the key activities of the DFS will be to determine strategies to reduce the pre-production costs.

Operating Costs

The operating cash cost estimates are shown in Table 9. The cost estimates were prepared by MDM Engineering, with SRK Consulting providing the cost for the mining portion and SLR providing inputs for the tailings and water. The costs shown are the weighted average costs for the various material types treated in each period derived from the production schedule.

The estimate is based on prices obtained during the fourth quarter of 2014, and is to an accuracy of -15% +25%, no contingency has been included in these costs.

*Table 9 – LOM Cost Estimate Summary (Q4, 2014)**

	PFS Years 1 - 10			PFS LOM			Scoping Study LOM		
Cost Centre	**US$M's / a**	**US$/t Ore**	**US$/kg Nb**	**US$M's / a**	**US$/t Ore**	**US$/kg Nb**	**US$M's / a**	**US$/t Ore**	**US$/kg Nb**
Mining	31.3	15.67	5.29	30.6	15.38	6.64	11.3	5.90	2.45
Processing & Maintenance	52.3	26.19	8.83	45.7	22.97	9.91	59.0	30.76	12.75
General & Administration	10.8	5.42	1.83	10.8	5.45	2.35	7.1	3.71	1.54
Total Mine Site Cash Costs	**94.5**	**47.28**	**15.95**	**87.1**	**43.80**	**18.90**	**77.5**	**40.37**	**16.74**
Product Transport	2.8	1.42	0.48	2.2	1.11	0.48	1.7	0.92	0.38
Marketing & Insurance	6.2	3.14	1.06	5.1	2.59	1.12	5.4	2.84	1.18
Royalty	7.5	3.80	1.28	5.9	2.97	1.28	5.9	2.26	1.28
Total Cash Cost	**111.2**	**55.64**	**18.77**	**100.4**	**50.47**	**21.78**	**90.7**	**47.22**	**19.58**

* Note: figures have been rounded and exclude sustaining capital

Compared to the Scoping Study processing costs have been reduced, mainly in connection with the reduced reagent consumptions. Mining costs have however increased due to more selective mining associated with targeting the Indicated Mineral Resource material in the first five years, achieving 0.68%Nb_2O_5 in the first 10 years and treating only carbonatites as RoM. The other material types e.g. fenites and breccias have been termed intermediate materials and are stockpiled separately for potential future treatment. Other costs are similar.

Marketing

Pricing – Most ferroniobium is sold under quarterly or yearly contracts established between producers and consumers. A small percentage (<2%) of total transactions is sold via the spot market. The prices of these spot transactions are essentially higher and quantities are generally much smaller. The quoted prices by the major reporting indexes are based on these spot transactions and they reflect very short-term and regional markets.

Ferroniobium prices are not purely demand driven and are essentially determined by CBMM and followed by the other two current producers. The prices are historically stable of US$40/kg Nb (±5%) and a long term forward pricing of US$45/kg Nb has been touted by Roskill and Camet. It is noteworthy that ferroniobium is sold on the niobium content (~66%), in kilograms, and generally on a delivered basis. Niobium pricing by region over the last 5 years is shown in Figure 14.

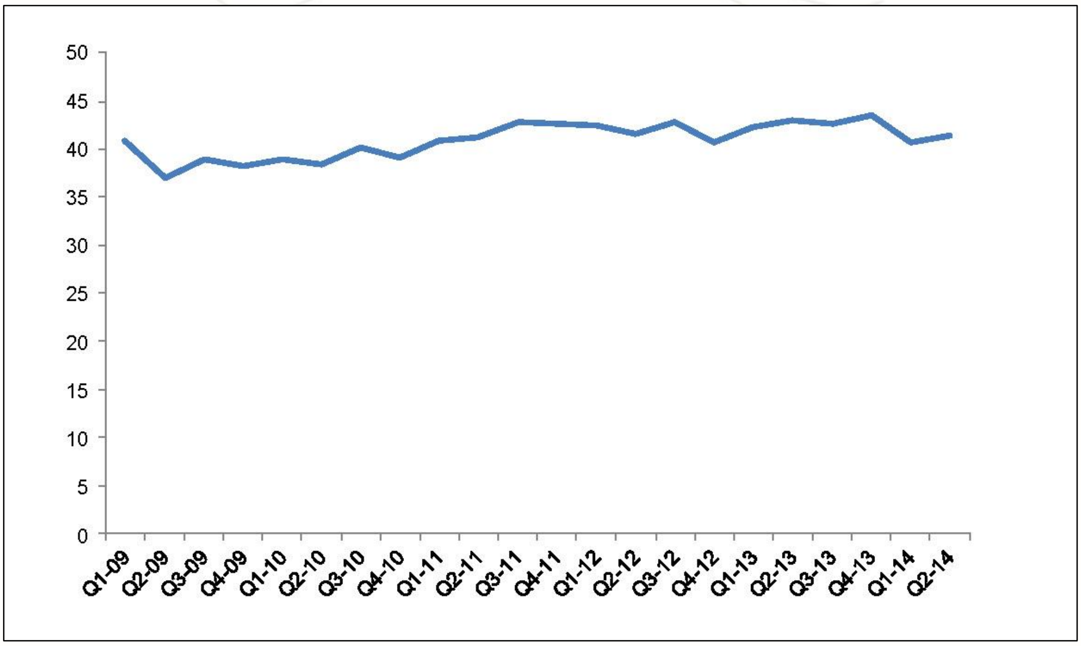


Figure 14 – Niobium pricing (USA: average quarterly value of ferroniobium imports, 2009 to 2014 (US$/kg Nb)

Supply – With regard to supply the three main niobium producers in the world (CBMM, Catalão and Niobec) together have an installed capacity of almost 89,000t Nb (135,000t FeNb). The only other producers are in China, Africa and CIS but their estimated annual capacity stands between only 500 and 800t Nb. Catalão and Niobec production is relatively stable, with CBMM adjusting their production to meet demand.

All three main suppliers produce standard grade ferroniobium, although CBMM also produces high grade ferroniobium, niobium oxide, niobium metal and alloys. The breakdown of their current capacity along with their reported expansion plans are shown below in Figure 15.

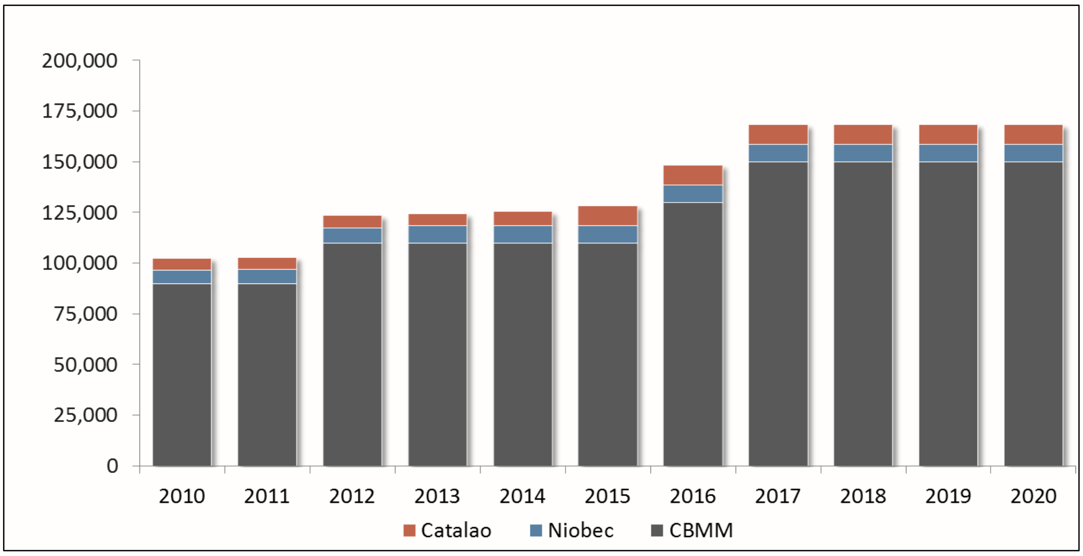


Figure 15 – FeNb production forecast by supplier

Demand – Relatively little of the niobium mined enters the market as ore or concentrate. The majority enters as ferroniobium, a direct feedstock for the steel industry. Brazil and Canada are the main exporters, with Brazil by the far the larger of the two. Approximately 90% of the global niobium consumption is used by the steel industry, of which HSLA steels make up the majority (>80% global consumption).

The global demand for niobium peaked in 2007 at around 55,000 tonnes Nb or 84,000 tonnes FeNb, before slumping in 2009 during the global financial crisis. Demand has since picked up again and in 2011 almost reached the levels seen before the crisis. However, consumption dropped in 2012 and 2013 as a result of the European financial crisis and the slowdown in China growth. In 2014, consumption growth picked up, with a 7% year-on-year growth. This raise in demand was mostly due to the United States, China, South Korea and India (Figure 16 below). Demand for niobium over the last 10 years has grown on average by 6.2% per annum whereas steel output has grown on average by 4.7%

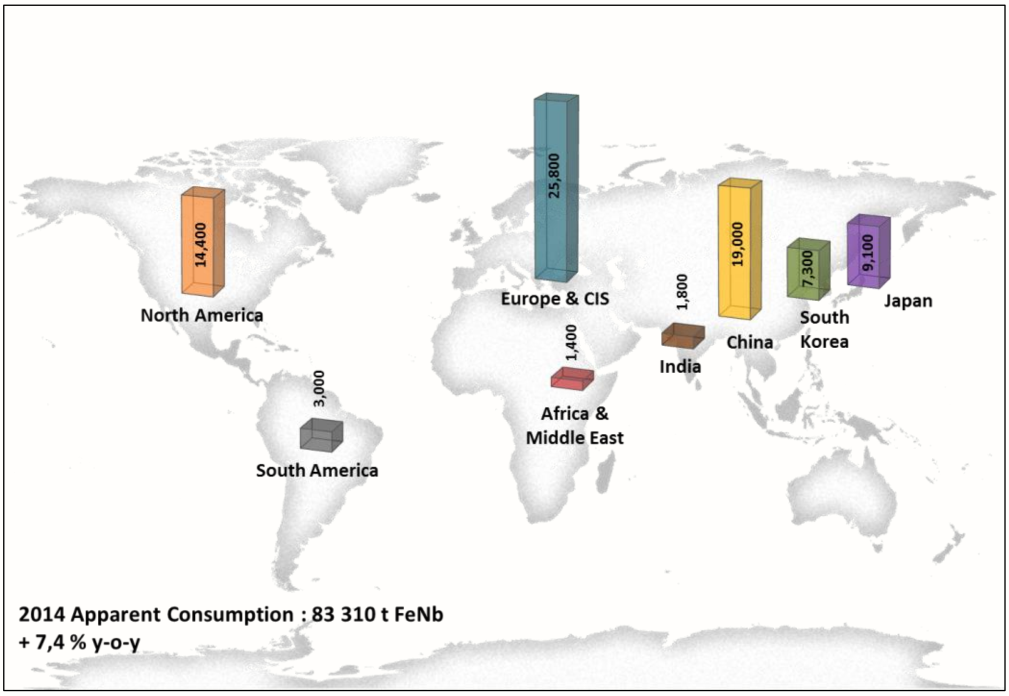


Figure 16 – FeNb demand by region

End Users – The unique properties of niobium make it a vital component in a diverse range of products and applications. These properties include corrosion resistance, very high melting temperatures, superconductivity, shape memory properties, high coefficient of capacitance and bio-compatibility.

Niobium is used in a variety of forms but standard grade ferroniobium (FeNb), as used in the steel industry, is the most common, accounting for almost 90% of total niobium usage. HSLA steels are the main niobium containing steels, accounting for the majority of niobium used in the steel industry. Other noteworthy niobium containing steels are stainless steels. HSLA steels themselves makeup for approximately 10% of the world's steel production and this number is seen to rise constantly in the future.

When niobium is added to these steels it acts as a grain refiner and precipitation hardener simultaneously improving the mechanical strength, toughness and corrosion resistance of steel. When used, niobium is added in very small quantities (as low as 0.02%). Niobium additions at these rates cost only a few dollars / tonne steel, but can have significant benefit in terms of reduced quantities of steel being required for equivalent performance.

The main applications of HSLA steels are large diameter gas linepipes, automobile body panels and chassis, bridges, high rise buildings and welded pipes (Figure 17 below).

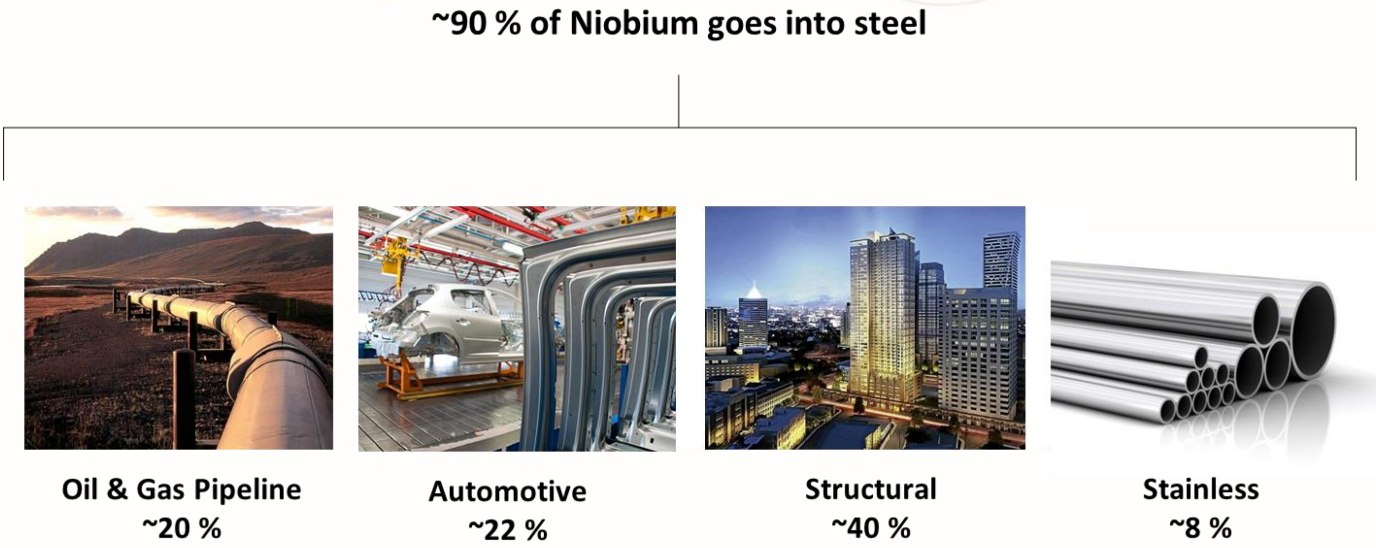


Figure 17 – End Users

Financial

The indicative financial results for the Project based on the inputs described previously are shown in Table 10 below. The key input data for the evaluation is:

- Initial capital expenditure - US$158M
- Pre-production and working capital - US$37M
- Average sustaining capital - $8.6M/annum
- Average LOM operating cost - US$50.47/t mill feed (US$21.78/kg Nb)
- Niobium Price US$44.00/kg Nb (contained in FeNb)
- Plant throughput - 2Mtpa
- RoM grades - 0.54% Nb_2O_5 LOM (0.68% Nb_2O_5 for the first 10 years)
- Metallurgical recoveries - 62% (with 97% recovery in converter)
- Government Royalty - 3%
- Tax rate - 30%

Table 10 – Financial Analysis

Summary Financial Data	
NPV_{10} (before tax)	US$708M
IRR (before tax)	71.1%
NPV_{10} (after tax)	US$470M
IRR (after tax)	56.5%
EBITDA/annum (av Yrs 1-10)	US$133M
EBITDA/annum (av LOM)	US$103M
Payback Period [6]	1.5 years
Average LOM Production	4,600t Nb (6,800t FeNb)
LOM	30 years

[6] From fully funded

Projected cash flow over time is summarised below in Figure 18. Capital expenditure starts in 2016 with pre-production costs and extends to the end of 2017 when construction is planned to be completed. Operations start in 2018 with the plant ramping up to full production by end 2018. Payback is approximately 1.5 years (from first production).

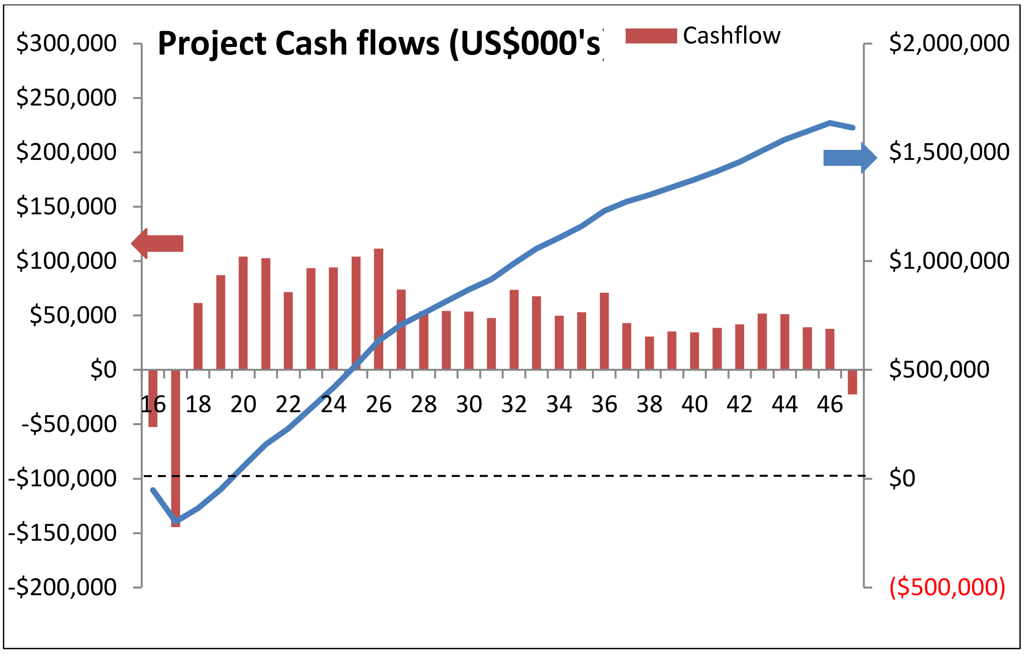


Figure 18 – Projected cash flow over time

Sensitivity analysis for the key project drivers are shown below in Figure 19. The Project is most sensitive to price, recovery (and head grade), with operating cost having more of an impact than capital costs.

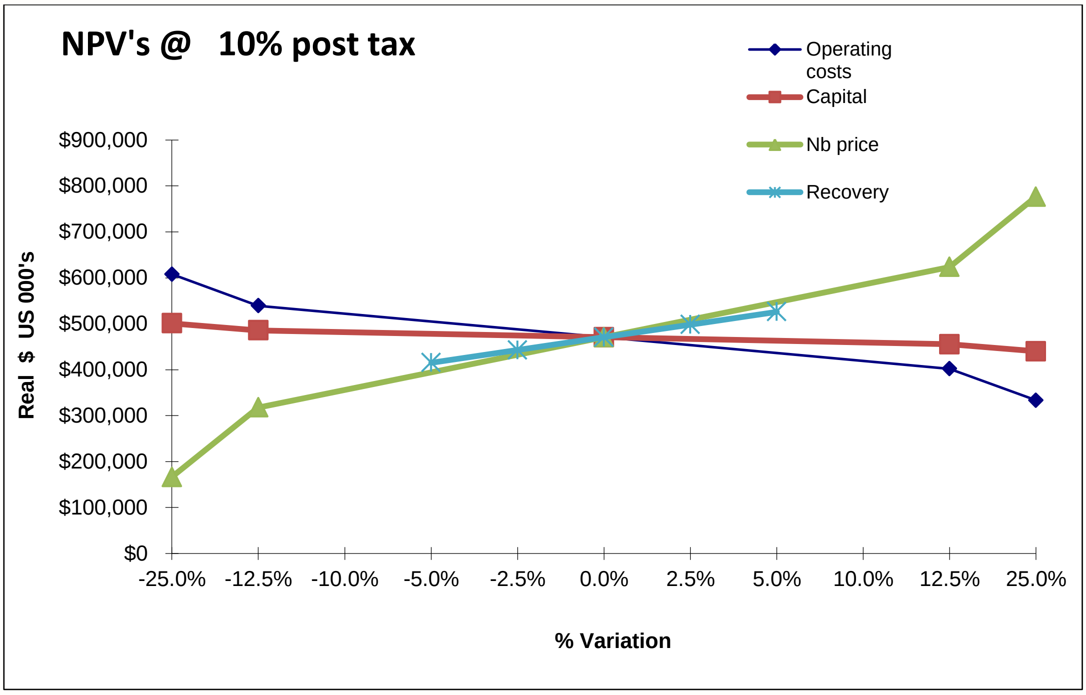


Figure 19 – Sensitivity analysis of key economic drivers

Implementation

The preliminary implementation schedule for the Project is shown below in Figure 20. The DFS has commenced with the initial work focused on the new Mineral Resource Estimate incorporating the additional data provided by the Nov/Dec 2014 drilling program. Based on this updated model the revised mine design will be established. These activities will occur concurrently with the pilot plant test work and basic engineering for the plant and infrastructure. All of this information will then be used to develop the capital and operating cost estimates along with a detailed execution plan and implementation schedule.

With the planned completion of the DFS in Q4 2015 and the conclusion of the financing arrangements it is expected that the detailed design work can start in 2016 with construction etc. following leading to a completion date of Q4 2017 for the plant start-up in Q1 2018.

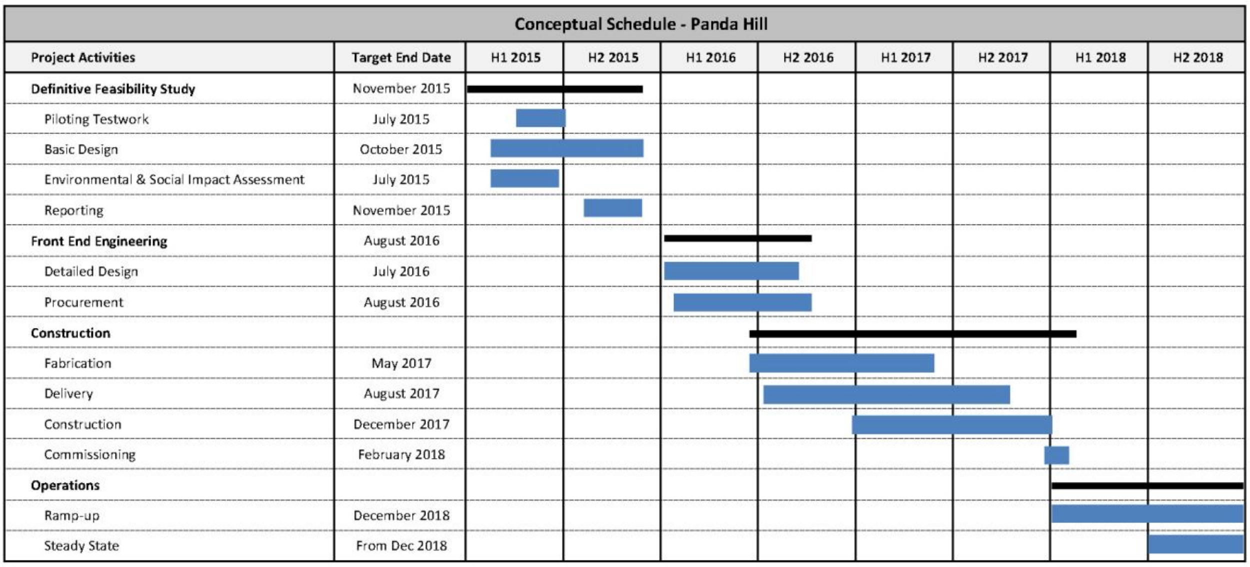


Figure 20 – Implementation schedule

Funding Strategy

The Company is actively seeking optimal offtake agreements for the sale of ferroniobium and has recently appointed Claude Dufresne to assist the Company in securing offtake positions. Project financing is underway and being coordinated by the Denham-backed Pangea team, additionally an experienced financial consultant with a track record of securing finance for African projects has been retained.

The PFS demonstrates that the Project has the potential for sufficient cash flow and has strategic advantages to potentially secure debt and equity finance to enable development of the Project.

Conclusions

The completion of the 2015 PFS Study for the Panda Hill Niobium Project is an important step into progressing the Project into production. With only three active niobium mines worldwide, Panda Hill is the most advanced, developing niobium project in the world. It has significant advantages in being an open cut operation, having excellent nearby infrastructure, low-cost capital, robust and low-cost flotation metallurgy, and an approved mining licence. There is no other niobium project in the world this advanced.

The PFS has identified the potential for a low operating cost, 2Mtpa operation that will produce ferroniobium, the most saleable niobium product. The December 2014 Mineral Resource Estimate shows 96Mt at 0.52% Nb_2O_5 and the study has been optimised such that a feed grade of 0.68% Nb_2O_5 has been achieved for the first 10 years (average LOM feed grade of 0.54%) with flotation recoveries of 62% and a demonstrated concentrate specification that meets the requirements of producing a marketable standard grade ferroniobium.

An initial construction capital cost of US$158M was determined which included the required plant and infrastructure. It has been assumed that in the beginning power will be via leased HFO onsite power plant, but that this will be changed over to a national grid connection during the operating phase. A further US$30M has been allowed for in the modelling to construct this transmission line. Average LOM operating costs for the process are estimated at US$50.47M (US$21.78/kg Nb) incorporating the grid power from Year 5.

Positive financial metrics are indicated for the Project with a projected NVP_{10} (after tax) of US$470M and post-tax IRR of 56% and a nominal pay-back period of 1.5 years (from fully funded). However based on a mature strategy the DFS will scoped so as to achieve a smaller entry into the market taking into account anticipated demand, expansion plans of the other producers and the needs of potential offtakers. The opportunity to increase the plant production as the world demand grows will also be considered.

Cradle is in close communication with the Tanzanian Government and all parties are working to see the Project progress into production.

Competent Person's Statement

The information in this document that relates to Exploration Results and Mineral Resources is based on information compiled or reviewed by Mr Neil Inwood who is a Fellow of The Australasian Institute of Mining and Metallurgy and a Member of the Australian Institute of Geoscientists. Mr Inwood is a full time employee of Verona. Mr Inwood has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Inwood consents to the inclusion in this document of the matters based on his information in the form and context in which it appears.

The information in this document relating to the Panda Hill Mineral Resource Estimate is extracted from the announcement entitled 'Significant Resource Upgrade for Panda Hill Niobium Project' dated 20 January 2014 and is available to view on http://www.cradleresources.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that, in the case of Mineral Resources or Ore Reserves, all the material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company notes that an updated Mineral Resource is underway and results will be released in Q2 2015. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Assumptions on the metallurgical and plant design factors as related to the broader PFS study are provided by Mr Dave Dodd. Mr Dodd is a consultant for MDM Engineering, South Africa, and is a Fellow of the SAIMM. Mr Dodd has sufficient relevant experience to qualify as a competent person as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Reserves". Mr Dodd has consented to the inclusion of this information in the document in the form and context in which it appears.

Assumptions on the Mining factors, operating costs and pit design are provided by Mr Sjoerd Duim. Mr Duim is a consultant for SRK Consulting (Perth, Australia), and is a Member of the AusIMM. Mr Duim has sufficient relevant experience to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Duim has consented to the inclusion of this information in the document in the form and context in which it appears.

Under the JORC Code (2012), Clause 9, consent has been sought and obtained, where applicable, from the Competent Persons listed above for any initial public release of information related to this report.

Assumptions on the Environmental Aspects are provided by Dr. Willison Kaguga Mutagwaba. Dr Willison Kaguga Mutagwaba is a consultant for MTL Consulting (Tanzania), and is a Consulting Engineer Registered with the Engineers Registration Board of Tanzania and a Member of the Institution of Engineers Tanzania. He is also registered as an Environmental Expert for Environmental Impact Assessment and Expert for Environmental Audit with the National Environment Management Council (NEMC) of Tanzania. Dr. Willison Kaguga Mutagwaba has consented to the inclusion of this information in the document in the form and context in which it appears.

Appendix 1 – JORC (2012) Table1

Portions of the JORC Code 2012 Table 1 has been previously filed for the Mineral Resource and is included here for completeness. Refer to the announcement entitled 'Significant Resource Upgrade for Panda Hill Niobium Project' dated 20 January 2014 that is available to view on http://www.cradleresources.com.au

Section 1 Sampling Techniques and Data (Criteria in this section apply to all succeeding sections).

Table 1 – Extract of JORC Code 2012 Table 1

Criteria	JORC Code Explanation	Commentary	Competent Person
Sampling techniques	• Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. o Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.	• Sample intervals for the 2013 and 2014 drill core were based on lithological units. Care was taken not to mix different lithologies or weathering types. Sample intervals were nominally 1m length but range from 0.3m to a maximum of 1.5m in barren uniform material. Sample lengths are kept to 1m in mineralised material if possible. • Quarter core samples were taken from the HQ and ½ core from NQ core for assaying. Competent core was cut using a core saw. Friable material was carefully sampled by hand. • RC Samples are split using a cone splitter into 1m samples, then a combined 2m composite is taken using a riffles splitter. RC sample weights are approximately 2kg. • Samples were dispatched to the SGS preparation laboratory in Mwanza, Tanzania, for crushing and pulverising to 85% passing 75µm. Pulps were then sent to SGS Johannesburg, South Africa, for niobium assay by XRF Borate Fusion. • A calibrated hand-held Niton XRF analyser is used to aid in mineralisation identification. • Historic core samples were sampled according to rock type. Sample intervals reportedly varied between 2m and 20m, however the assay data contains some sample intervals much larger than this. Unrealistic intervals were not included in the estimate.	NAI
Drilling techniques	• Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).	• 2013 diamond drilling was conducted by Bamboo Rock drilling. 2014 diamond drilling was conducted by Capital Drilling. Drilling typically started in HQ3 core to allow for safe collaring and to capture sufficient material for metallurgical test work. When difficult drilling conditions were encountered, the HQ rods were left as casing to allow for continuation of drilling using NQ rods. HQ and NQ core is typically taken. • Core orientations were done with the Reflex orientation tool. • RC Drilling is by a Schram 450 rig drilling with a 5.5" diameter bit typically and a 900cfm compressor. No booster compressor was required for RC drilling. • Type of rig and core size were not recorded for the majority historic holes. One generation of historic holes (drilled by RUDIS) were drilled using a Longyear 38DC rig with NQ core sampled as quarter core and BQ core sampled as half core.	NAI
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Core recovery is measured as a % and any cavities or missing intervals are recorded. • Recovery was generally high for all core. Up to 6% voids are reported in some regions. • RC recovery is recorded by visual estimation of recovered sample bags and by weighing all sample rejects from the splitter. Recovery is generally good. • Recovery is not recorded for the historic data.	NAI
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in	• Logging of the 2013 and 2014 drill holes included recording of lithological contacts, weathering contacts, vein/dyke orientations, and the orientation of any observed flow banding. Structural measurements (alpha and beta) were taken. Wet and dry core photos were taken. All Cradle core was logged. • Geotechnical logging of the Cradle holes were completed by a	NAI

Criteria	JORC Code Explanation	Commentary	Competent Person
	nature. Core (or costean, channel, etc) photography. • The total length and percentage of the relevant intersections logged.	geotechnical engineer. RQDs, defects, weathering, strength, infill, and jointing were recorded. • Logging is of sufficient quality for current studies. • Geological logging of historic holes was qualitative, focusing on rock type and mineralogy, particularly the presence of pyrochlore and apatite, and the carbonate mineralogy. Some holes only had summary log information. Overall the historical logging is repeated by the 2013 logging. The 2013 logging contains the most detail, the RUDIS logging is generally good, and the logging of the MBEXCO drill holes is generally in less detail than the other drill campaigns.	
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• For the 2013 and 2014 drilling, half core samples were sent to SGS Vancouver for metallurgical testing and quarter core samples were sent to SGS Johannesburg for assay after being sent to SGS Mwanza (Tanzania) for preparation. • All sampling of the 2013 and 2014 core was supervised by a qualified geologist. Ticket books were used with pre-numbered tickets placed in then sample bag and core tray double checked against the ticket stubs to guard against sample mix ups. • One metre lengths of quarter HQ/NH core, as sampled by Cradle, are considered sufficient to provide an adequately representative sample for assaying. • RC samples were taken as 2m composites. • RUDIS sampled NQ core as quarter core and BQ core as half core to ensure similar weights were collected. Samples were crushed on site, composited and sent to Yugoslavia for analysis in their own laboratory using a Philips XRF machine. • Details of historic sampling from GST and MBEXCO are not known. • Portions of the 2013 drill holes that twin sections of the historic holes show comparable Nb_2O_5 grades.	NAI
Quality of assay data and laboratory tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.	• Coffey conducted an inspection of the Johannesburg laboratory during a site visit in August 2013 and found the laboratory to be of industry standard with no problems noted. • Matrix matched standards are inserted every 20 samples on sample numbers ending in 0 (eg *00, *20, *40 etc). Eight different standards were used. Approximately 10g of standard was used for the XRF Borate fusion analysis samples (note: borate fusion only used ~4g of pulp). Standards were either supplied pre=packaged or were measured into a small paper bag so the standards were not blind. • Blanks were inserted at a 1:50 ratio (i.e. samples *10, *70) and at the start of each batch. • A program of coarse reject duplicates was undertaken for the core samples. Duplicates were taken at a rate of approximately 1 in 30. • Field duplicates of RC samples were taken at a rate of 1 in 30. • A selection of pulps were sent to Genalysis in Perth for umpire assaying.	NAI/EM
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• Coffey conducted site visits in August 2013 and September 2014, during the drilling programs, observing all drilling procedures. All procedures were considered industry standard, well supervised and well carried out. • Geological data is entered directly into a "Tough Book" (logging laptop computer). The data is then downloaded to a computer where it is compiled into an access database. • Assay data is provided as csv files from the laboratory and extracted using DataShed, eliminating the chance of data-entry errors. Spot checks are made against the laboratory certificates. • 3 RC holes have been drilled to twin the 2013 diamond drilling.	NAI/EM
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Collar positions were set out using a Handheld Garmin GPS with reported accuracy of 3m. Two pegs lined up using a Suunto compass were used to align the rig. Historic holes were drilled on the Tanzanian ARC60 grid. Cradle Resources are using WGS84, UTM36S. • Drillhole positions have been surveyed by DGPS using a local base station and survey stations and have an average relative accuracy of ±2cm.	NAI

Criteria	JORC Code Explanation	Commentary	Competent Person
		• Downhole surveys were taken using a Reflex electronic multi shot instrument. Collar surveys were taken using a compass and inclinometer. Whilst there is the possibility of deviations in the recorded azimuth due to the presence of magnetite in the carbonatite, overall the surveys showed only minor deviations in azimuth and dip. There is no apparent trend to the deviations based on drilling direction.	
Data spacing and distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• The drill holes are spaced on a nominal 50m to 100m spacing; with 50m section lines. • The 2014 drilling had a nominal sample length of 1m for diamond and 2m for RC. • The data spacing is considered suitable for Mineral Resource estimates.	NAI/EM
Orientation of data in relation to geological structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• The distribution of pyrochlore/columbite and hence of niobium within the carbonatite is fairly uniform for the lower grade material. Higher grade areas occur in the steeply dipping schlieren (flow banding), particularly in the magnetite rich zones. The recent drilling has been oriented with a dip of 60° with an azimuth of 045 degrees, which is considered acceptable to test the mineralisation.	NAI/EM
Sample security	• The measures taken to ensure sample security.	• Details for sample security for the historic drill holes is not known. • Samples from the 2013 and 2014 drilling were placed into small plastic bags with the pre-printed sample number. These bags were stapled shut in the core yard. The samples were then put into large polyweave or plastic bags with approximately 10 samples per bag. These were sealed shut using tape prior to being transported to the SGS preparation laboratory in Mwanza (northern Tanzania).	NAI
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• Coffey conducted a site visit during the drilling program in August 2013 and during the infill drilling program in September 2014. The sampling techniques were reviewed and found to be of industry standard and entirely appropriate for this type of deposit.	EM

Section 2 Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section).

Criteria	JORC Code Explanation	Commentary	Competent Person
Mineral tenement and land tenure status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings. • The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	• The project area is located on three granted MLs (ML237/2006, 238/206 and 239/2006) located approximately 25km WSW of regional capital of Mbeya, in southern Tanzania. The three MLs cover an approximate area of 22km^2. Cradle Resources holds a 50% interest in all three MLs through its ownership of Panda Hill Mining Pty Ltd (PHM). RECB Ltd (a BVI Company) owns the three Panda Hill MLs, PHM owns 50% of RECB Ltd and has an option to purchase the remaining 50%. It is understood that a 3% royalty may be payable to the Tanzanian Government once mining has started. The licences are not subject to any 3rd party agreements. • The resource and the bulk on ML237/2006 and ML238/2006 are located within a region of designated Prison grounds. The Mineral Resource itself is removed from any buildings or infrastructure. As the location of the Mineral Resource is located within the prison boundaries, only the prison-related community would be directly affected by any potential mining activities. • The three granted MLs are current until 16 November 2016. Department of Prisons approval is required for any work to be conducted on ML237/2006 and ML238/2006. Cradle Resources has obtained permission to operate on these areas and is not aware of any impediment for future operations.	NAI
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• The Panda Hill Niobium Project has been explored since the 1950s. The Geological Survey of Tanzania (GST) and Mbeya Exploration Company (MBEXCO) drilled 83 diamond drill holes for a total depth of 5,187m in the Panda Hill project area in the 1950's and early 1960's. Yugoslavian company RUDIS, in joint venture with the State Mining Company of	NAI

Criteria	JORC Code Explanation	Commentary	Competent Person
		Tanzania (STAMINCO), drilled 13 diamond drill holes for a total of 1,305m in the period of 1978 to 1980. These holes were drilled on a 100m x 100m spaced centres on the Tanzanian ARC60 grid. Drillhole logs and assays are available for the historic drilling. Laboratory certificates have been sighted for the GST drilling and original data printouts have been obtained for the RUDIS drilling.	
Geology	• Deposit type, geological setting and style of mineralisation.	• The Project is characterised as a carbonatite hosted niobium deposit. The bulk of the Panda Hill niobium mineralisation is found within pyrochlore and lesser columbite. The bulk of the known mineralisation is located within carbonatite lithologies, with Nb_2O_5 grades typically ranging from 0.1% to 1%. Higher-grade niobium mineralisation is noted within flow-banding (schlieren) within the carbonatite and within the surficial weathered cap.	NAI
Drillhole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: ▫ easting and northing of the drillhole collar ▫ elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar ▫ dip and azimuth of the hole ▫ down hole length and interception depth ▫ hole length • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	• Drillhole coordinates and orientations are provided in Table 2 of this report. • This statement relates to a Mineral Resource. Exploration results have been announced by Cradle Resources previously. • 64 of the historic drill holes have been removed from the drilling database. 37 of these are replaced by new drilling, 8 are adjacent to other better informed historic holes, and the remainder are either outside of the Mineral Resource area or too far from other holes to allow interpretation and estimation in that area, and/or have insufficient assay data or data quality to use.	NAI/EM
Data aggregation methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• This statement relates to a Mineral Resource. Exploration results have been announced by Cradle Resources previously.	
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported. • If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	• This statement relates to a Mineral Resource. Exploration results have been announced by Cradle Resources previously.	
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.	• A drillhole plan and accompanying cross-sections are provided in Figures 2 to 5 of this report.	NAI/EM
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of	• This statement relates to a Mineral Resource. Exploration results have been announced by Cradle Resources previously.	

Criteria	JORC Code Explanation	Commentary	Competent Person
	Exploration Results.		
Other substantive exploration data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	• Detailed geological mapping has been conduction by the Tanganyika Geological Survey in the 1950s and RUDIS in the 1980s. Two papers detailing the geology of the Panda Hill carbonatite were subsequently published in Economic Geology. • Cradle conducted geological mapping at the same time as the drilling program. Both the recent and historic mapping provide information relating to the orientation of the flow banding within the carbonatite. • Metallurgical test work has been conducted by MBEXCO and RUDIS in the past. MBEXCO also conducted trial mining. Cradle has undertaken metallurgical test work on the mineralized carbonatite material. At the time of writing the results are not available, however there is no reason to suspect they will be materially different from the historic test work results.	NAI
Further work	• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• An infill drilling program is underway at the time of writing, aimed at producing an improved Mineral Resource estimate to higher levels of confidence and to enable more detailed metallurgical and lithological/weathering modelling. • A magnetic survey has been completed over the project which will aid in the understanding of the broader structures within the deposit.	NAI

Section 3 Estimation and Reporting of Mineral Resources (Criteria listed in section 1, and where relevant in section 2, also apply to this section).

Criteria	JORC Code Explanation	Commentary	Competent Person
Database integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. • Data validation procedures used.	• The 2013 and 2014 data (80% of the resource data) collection was undertaken directly into Tough Book computers. Entry of all 2013 and 2014 assay data was through the commercial DataShed database software. Validation routines have been conducted on all aspects of the data by Cradle. • Coffey has conducted its own validation process on the data, with checks looking for missing/overlapping intervals, missing data, extreme values. Coffey has also carried out spot checks on the assay data against the laboratory certificates. • Historic data (20% of the Resource data) was compiled by the Canadian National Geo. Expl. Ltd. (CINGEX) in 1972-1973. Neil Inwood of Verona Capital has validated this data compilation against original laboratory assay sheets for the GST and MBEXCO drilling, and found only 1 data transposition. The compilation was also validated against and original computer printout of the RUDIS database, and found to be in accordance 100%. No original geological logs were found for validation.	NAI/EM
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• Neil Inwood supervised the Cradle Resources 2013 and 2014 drilling programs on site. • Ellen Maidens conducted site visits during the August 2013 drilling program and the September 2014 drilling program. All drilling, logging and sampling procedures were observed and found to be of industry standard with no problems highlighted. Ellen also conducted a site visit of the SGS Johannesburg assay laboratory with Keith Bowes of Cradle Resources during the 2013 visit. The laboratory was found to be of industry standard with no material problems noted.	NAI/EM
Geological interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. • Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	• The understanding of the orientation of the flow-banding from mapping and recent drilling has been used to support the orientations seen in the Variography and used in the Mineral Resource estimate. • It is apparent that over the extent of the Mineral Resource area, there are areas of different orientations. It is intended further mapping and drilling will help delineate these area into discrete domains.	NAI

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th><th>Competent Person</th></tr>
<tr><td>Dimensions</td><td>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</td><td>The block model dimensions are given below:
<table>
<tr><th></th><th>Easting (X)</th><th>Northing (Y)</th><th>RL (Z)</th></tr>
<tr><td>Model Origin</td><td>526,000</td><td>9,004,800</td><td>1,200</td></tr>
<tr><td>Model Extent (m)</td><td>1,400</td><td>1,800</td><td>500</td></tr>
<tr><td>Parent Cell dimension (m)</td><td>25</td><td>25</td><td>5</td></tr>
<tr><td>Minimum Subcell dimension (m)</td><td>5</td><td>5</td><td>1</td></tr>
<tr><td>Number of Parent Cells</td><td>56</td><td>72</td><td>100</td></tr>
</table>
Note that due to drillhole depths, mineralisation is only modelled for a maximum vertical extent of ~ 350m below surface. Mineralisation occurs from surface.</td><td>IK</td></tr>
<tr><td>Estimation and modelling techniques</td><td>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.
The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.
The assumptions made regarding recovery of by-products.
Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).
In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
Any assumptions behind modelling of selective mining units.
Any assumptions about correlation between variables.
Description of how the geological interpretation was used to control the resource estimates.
Discussion of basis for using or not using grade cutting or capping.
The process of validation, the checking process used, the comparison of model data to drillhole data, and use of reconciliation data if available.</td><td>Multiple Indicator Kriging (MIK) with change of support for a final SMU model is considered a robust method for the style of mineralisation and intended purpose of the model (for PFS use). The mineralisation envelope has been modelled using a nominal 0.2% Nb_2O_5 lower cut off to define the mineralisation. The estimation was carried out using Datamine mining software.
While no top cut is used in the MIK estimation process, a top cut of 3% Nb_2O_5 was applied to the Nb_2O_5 composites used for variography and geostatistical validation. This was based on analysis of the Nb_2O_5 population distribution.
MIK grade estimation with change of support has been applied to produce 'recoverable' Nb_2O_5 estimates targeting a selective mining unit (SMU) of 6.25m x 12.5m x 5m.
Search ellipses were oriented dipping to the SW based on variography and geology. Estimation was generally conducted in a 2 pass strategy with the second estimate completed with expanded sample searches and relaxed composite collection criteria.
Validation was by visual and statistical comparison of the estimation with the input data. The previous 2013 Mineral Resource estimate is available for comparison.
The new drilling has increased the confidence in the geology and grade continuity, resulting in the conversion of a large part of the Mineral Resource to Indicated category. Deeper drilling has also resulted in an overall increase in tonnage and metal content for the project. A combination of infill drilling, replacement of historic drilling, and redefinition of oxide boundaries has resulted in a reduction in both tonnage and grade of oxide material.
There is no mining at Panda Hill to date.
No assumptions are made regarding recovery of by-products.
Additional elements (Fe_2O_3, SiO_2, CaO and TiO_2) were estimated by Ordinary Kriging (OK).
Probability Kriging was conducted for lithology (fenites), and oxidation/weathering variables.
The block size of 25m x 25m x 5m is appropriate to the sample spacing and style of mineralisation.</td><td>IK</td></tr>
<tr><td>Moisture</td><td>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</td><td>Tonnages are based on insitu dry bulk density measurements.</td><td>IK</td></tr>
<tr><td>Cut-off parameters</td><td>The basis of the adopted cut-off grade(s) or quality parameters applied.</td><td>A nominal reporting grade of 0.3% Nb_2O_5 has been chosen to reflect a potentially economic mining cut off. Further work is required to define this cut-off.</td><td>IK/NAI</td></tr>
<tr><td>Mining factors or assumptions</td><td>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding</td><td>Based on the studies completed, there is sufficient data to support the design of a typical moderate scale open cut mine to economically extract the contained resource and reasonable prospects for eventual economic extraction.
The SMU dimension of 6.25m x 12.5m x 5m assumes a moderate level of mining selectivity if required.
The assumption is that there is existing, steady demand and price for</td><td>IK/NAI</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th><th>Competent Person</th></tr>
<tr><td></td><td>mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</td><td>the niobium product.</td><td></td></tr>
<tr><td>Metallurgical factors or assumptions</td><td>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</td><td>Published recovery[1] for a similar carbonatite orebody currently in production averages 58% Nb_2O_5. This producing plant and the flowsheet tested as part of the 2013/2014 programs by Cradle indicate similar recoveries at the same grade are possible. Further test work, also at SGS Lakefield, to test the main material types observed on the deposit from the 2014 drill program is underway with similar results seen as for the 2013 test program.
[1] "The Production of Ferroniobium at the Niobec Mine" by Claude Dufrense and Ghislain Goyette.</td><td>NAI</td></tr>
<tr><td>Environmental factors or assumptions</td><td>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</td><td>No detailed assumption regarding possible waste and process residue disposal options or environmental surveys have been made at this early stage of the project. Environmental studies are underway on the project with the initial information indicating no critical issues identified. Tailings will be stored in a fit for purpose tailings storage facility located within the leases.</td><td>NAI</td></tr>
<tr><td>Bulk density</td><td>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.
The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.
Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</td><td>2793 density measurements have been taken from Cradle core. The majority of these have been determined using the calliper method. In 2013, density measurements were also determined using the Archimedes method. A statistical comparison revealed negligible difference between the methods.
After statistical review of the density data, bulk density values have been assigned to the block model as follows:
<table>
<tr><th>Oxidation State</th><th>Mineralised Zone</th><th>Waste</th></tr>
<tr><td>▪ Oxidised</td><td>▪ 2.15t/m^3</td><td>▪ 2.33t/m^3</td></tr>
<tr><td>▪ Moderately oxidised</td><td>▪ 2.53t/m^3</td><td>▪ 2.53t/m^3</td></tr>
<tr><td>▪ Fresh</td><td>▪ 2.68t/m^3</td><td>▪ 2.74t/m^3</td></tr>
</table>
The bulk density values for material within the mineralisation envelope incorporate a 6% void factor for oxide material, and a 3% void factor for transitional and fresh material resulting from statistical estimates of voids/cavities recorded during drilling.</td><td>IK</td></tr>
<tr><td>Classification</td><td>The basis for the classification of the Mineral Resources into varying confidence categories.
Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).
Whether the result appropriately reflects the Competent Person's view of the deposit.</td><td>Mineral Resource classification was developed from the confidence levels of key criteria including drilling methods, geological understanding and interpretation, sampling quality, data density and location, grade estimation and quality of the estimates, as well as the various and more subjective considerations discussed in the JORC Code 2012 Table 1.</td><td>IK</td></tr>
<tr><td>Audits or reviews</td><td>The results of any audits or reviews of Mineral Resource estimates.</td><td>The 2012 Mineral Resource estimate for Panda Hill, completed by Coffey, was reviewed in an Independent Geologist's Report by Ravensgate Mining Industry Consultants and found to be appropriate</td><td>EM</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary	Competent Person
		though conservative.	
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• The grade estimate is based on the assumption that small to medium scale open cut mining methods will be applied. • The Mineral Resource is recoverable model assuming a 6.25m x 12.5m x 5m SMU. • The MIK SMU estimation process is deemed appropriate for use in this style of deposit. • Factors affecting the confidence and relative accuracy of the Mineral Resource are primarily: o Incorporation of the historic drillhole data (20% of total). This data is gradually being phased out and superseded by current drilling. o Increased drilling density might vary model results in localised areas. o Accuracy of averaged bulk density data and associated void factors. There has been a substantial amount of data collected by Cradle Resources. Mineralisation and lithology may prove to be more variable than the current scale of drilling suggest. o The variance adjustment factor applied for the SMU model may vary in future estimates according to the amount of data available within the domains being modelled. o Geology and domains are possibly more complex than assumed by the current Mineral Resource model, particularly with respect to strike and dip of mineralisation and possible multiple potential orientations related to the complex geometry of the intrusives. o Fenite lithology definition may vary with available data, and is significant for metallurgical processing. o Cutoff grades may vary in future according to mining studies.	IK

Section 4 - Estimation and Reporting of Ore Reserves (Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Note: An Ore Reserve has not been declared for the Project. The information below is provided in the form of the JORC (2012) Table 1-Section 4 to allow for a comprehensive summary of the PFS study and the quality of the information used to derive the findings**.**

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	**An Ore Reserve has not been declared for the Panda Hill Niobium Project** The Mineral Resources used in the Study are the same as referred to in the previous table 1 and preceding document. The Mineral Resources estimation was undertaken by Coffey Mining in December 2014. The first 10 years of the Study concentrated on the Indicated Mineral Resource core of the deposit. The Mineral Resources are reported inclusive of the grade-tonnage amounts used in the study.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	Site visits were undertaken by representatives of Coffey Mining (Ellen Maidens - Resources), MDM Consulting (Stuart Thomson - Engineering), SLR Consulting (Stuart Dorman - Tailings and Hydrological), MTL Consulting (Willison Mutagwaba - EISA and Environmental) and SRK Consulting (Sjoerd Duim -Mining) towards the end of July2014 as part of the PFS kick-off process. Various discussions were held on site during the 3 day visit and the feedback from these visits were used to shape the current PFS study.
Study status	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such	**An Ore Reserve has not been declared.** The Study is classified as a Preliminary Feasibility Study. The portion of the study dealing with Indicated Mineral Resources has been undertaken in accordance to the JORC 2012 code, but Cradle has decided not to declare Ore Reserve at this stage. The broader study utilises Inferred Mineral Resources in the later years of the project and these cannot be used to support an Ore Reserve. The Study has been undertaken by a team of industry professionals as listed below:

Criteria	JORC Code explanation	Commentary
	studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	• Coffey Mining - Ellen Maidens - Resources • MDM Consulting - Stuart Thomson – Engineering. Plant capital and operating costs • SLR Consulting - Stuart Dorman - Tailings and Hydrological • MTL Consulting - Willison Mutagwaba -EISA and Environmental • SRK Consulting - Sjoerd Duim –pit optimisation, pit design, production scheduling, mine capital and operating costs) • SRK Consulting – Richard Stuklis – Geotechnical • Cradle Resources – Financial Modelling, marketing and transport
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	The lower cut-off grade was initially determined from a first-principles analysis of the expected recovery, cost to mine, cost to process and market and estimate of the appropriate market sales price (approximately 0.3% Nb_2O_5). This cut-off was then raised to enable an aggressive high-grade mining scenario utilising a 0.42% lower cut-off in the first 10 years of mining.
Mining factors or assumptions	• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). • The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. • The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling. • The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). • The mining dilution factors used. • The mining recovery factors used. • Any minimum mining widths used. • The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. • The infrastructure requirements of the selected mining methods.	**An Ore Reserve has not been declared.** The PFS has focussed on an open pit mining scenario as this best suits the mineralisation grade profile and estimated mining costs. Mineralisation outcrops on the hill and the mineralisation is generally massive with localised high-grade tabular zones. The Study was based on 100% Indicted Mineral Resources in the first 5 years of mining for mill feed and 78% Indicated Mineral Resources as mill feed contribution in the first 10 years of mining, and an overall 36% of Indicted Mineral Resources over 31 years. SRK Consulting undertook a geotechnical analysis of diamond core drilled up to September 2014, this included physical test work on selected core billets and initial analysis of test-pits in the region of the plant and tailings infrastructure. The results from this testwork were then incorporated into the mine and tailings design work. Bench-stack pit slope angles of 44^{o} and 48^{o} were derived for weathered material domains and 52^{o} and 54^{o} for fresh material domains. These angles were empirically determined from assessment of geotechnical data and used as input to mining pit optimisation design. As the Mineral Resource model used was a Multiple Indicator Kriged (MIK) model with a generally broad mineralisation halo, it was considered appropriate that no mining dilution be added, as this was mathematically incorporated in the Mineral Resource model. A 5% mining loss was used in the production scheduling. The Study focussed on a 2Mtpa mill feed operation with a SMU size of 6.25m x 12.5m x 5m. The scheduling work was carried out such that for the first 5 years of operation the RoM will be solely sourced from Indicated Mineral Resource material, any Inferred Mineral Resource or low grade material will be stockpiled. After the first 5 years the RoM will consist of a combination of Indicated Mineral Resource and Inferred Mineral Resource material, including stockpiled Inferred Mineral Resource material that meets the grade requirements. After 10 years an average of 78% Indicated Mineral Resources would be used as mill feed contribution, the remainder consisting of Inferred Mineral Resource; over the 31 year LOM a total of 36% Indicated Mineral Resource make up the mill feed. A RoM grade of 0.7%Nb_2O_5 was targeted for the first 10 years of operation and this was relaxed in subsequent years with an average grade of 0.47% Nb_2O_5 for years 11 to 30. A minimum mining width of 50m was designed for pit push backs, 15m for single access haul roads and 25m for dual access haul roads were envisaged. A bench height of 5m benches was used with loading on 2 x 2.5m flitches. The Study incorporates Inferred Mineral Resource material, substantially so after 10 years. The impact on not including Inferred Mineral Resource material has been tested and would still result in a project of economic value to be achieved; albeit with a significantly lower expected NPV. A 2Mtpa mill feed mining rate would require 2 x 120 tonne class excavators and twelve 90tonne payload capacity haul trucks; plus relevant stores, workshop and administration buildings. Total material mined has been limited to a maximum of 9.5Mtpa A process plant will be required plus associated infrastructure. A 2km haul road along the eastern hill side will also be required to access the mineralisation and provide a transport route to the ROM pad.

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. • Whether the metallurgical process is well-tested technology or novel in nature. • The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements. • The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	Based upon the results of the 2014 Scoping Study, a single stage floatation process was selected as the optimal processing strategy for the Panda Hill niobium mineralisation. This involved over 165 open circuit and 17 locked cycle test undertaken at SGS Lakefield in Ontario (specialists in niobium processing). Sample selection focused on representative samples over the first 10 year life of mine with over 3 tonnes of diamond core sample through the lateraland vertical extent of the deposit. The process flowsheet described is similar to the circuits of the current niobium operations (Catalão, CBMM and Niobec), with the flotation regime most similar to Niobec which has a similar geology and mineralogy to the Panda Hill primary material. This processing involves crushing by a 2-stage SAG ball mill circuit, desliming then flotation. The flotation circuit id a standard rougher scavenger circuit with up to 5 stages of concentrate cleaning. The flotation chemistry is based on an amine system of collectors with acid for pH control in the cleaners to reject silicate. The flotation concentrate, although high grade (~50% Nb_2O_5), does contain some impurities which must be removed prior to the ferroniobium converter. The final leach residue is dried and fed to a DC furnace for standard grade ferroniobium production using aluminium as a reductant. The final ferroniobium product is then crushed and packaged to meet the specific customer specifications Pilot plant testwork was planned for 2015 but had not been undertaken at the time of this Study.
Environmental	• The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	As part of the initial development work undertaken by the previous owners an EIAC for Panda Hill was approved in June 2005 and based on this a mining licence was issued to Panda Hill Mines Ltd. Although the mining licence are still in effect, a new EIAC is required as no development at the mine site was undertaken in the three years after the issuing of the certificate. As such a new Terms of Reference (ToR) and ESIA Scoping document was prepared as part of the Scoping Study completed last year. The ToR were accepted by the National Environmental Management Council (NEMC) in late 2013. Waste rock characterisation is ongoing. A site has been selected for the Tailings Storage Facility and baseline monitoring activities have commenced for this region.
Infrastructure	• The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	The Project area has good general infrastructure with a major highway only 5km from the project and a railway line which passes through the northern portion of the Mining Lease (2km away). A major cement factory is located approximately 5m north of the project and a new international airport is located 8km north-east of the project. The general area has a good base for skilled and semi-skilled labour and accommodation is readily available nearby.
Costs	• The derivation of, or assumptions made, regarding projected capital costs in the study. • The methodology used to estimate operating costs. • Allowances made for the content of deleterious elements. • The source of exchange rates used in the study. • Derivation of transportation charges. • The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. • The allowances made for royalties payable, both Government and private.	All costs used in the PFS Study were based upon modelling a 30 year life of mine and are reported in US$. Mining costs were based on international mining contractor Schedule of Rates (SoR) submissions. Capital costs for the plant and infrastructure were based upon cost supplied by MDM engineering and have an expected accuracy of +25%- 15%. Mining capital costs were based upon analysis of quotes obtained from mining contractors. Allowances for grade control, fixed general & administration costs, dewatering and ROM rehandle have been included. Capital costs include the costs to remove silica from the concentrate. The PFS assumes the use of contactor mining, with rates based upon quotes from suitably experienced Tanzanian based mining contractors. The PFS assumes a laboratory is on a lease arrangement with a budgeted sampling and analysis cost for mill and grade control samples. Power costs have been based on the assumption of a leased heavy fuel oil (HFO) power plant plus management fee. A ferroniobium end-product will be produced on site, no external refining will be required. The plant costs reflect a facility suitable to produce a saleable product.

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
Transport charges are based upon rail or road haulage to Dar es Salaam port then shipping to customers in Europe and Asia.
A 3% royalty and 30% tax rate have been included in cost estimations. No other royalties are understood to be payable.
Key input parameters for a 2Mtpa plant are summarised below:

Initial capital expenditure - US$158M
Pre-production and working capital - US$37M
Average sustaining capital - US$8.6M/annum
Average LOM operating cost - US$50.47/t mill feed (US$21.78/kg Nb)
Plant throughput – 2Mtpa
RoM grades – 0.54% Nb_2O_5 LOM (0.68% Nb_2O_5 for the first 10 years)
Metallurgical recoveries - 62% (with 97% recovery in converter)
Metal price - US$44/kg
Government Royalty – 3%
Tax rate – 30%

</td></tr>
<tr><td>Revenue factors</td><td>

The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.
The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.

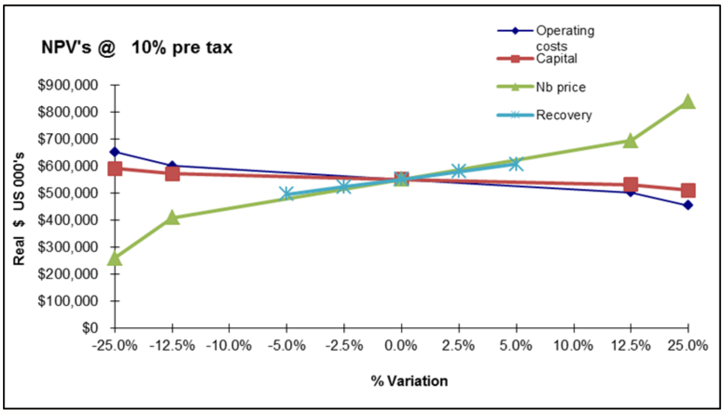
</td><td>
The head grade is based upon the recoverable SMU MIK Resource model.
A long-term niobium price of US$44/kg has been used based upon an analysis of publically available contract data and estimated growth rates.
All prices are based on USD.
Processing costs include the production of a saleable ferroniobium product.
</td></tr>
<tr><td>Market assessment</td><td>

The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.
A customer and competitor analysis along with the identification of likely market windows for the product.
Price and volume forecasts and the basis for these forecasts.
For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.

</td><td>
Cradle has undertaken a market assessment and analysed the supply and demand dynamics of the niobium market. Ferro niobium forms 90% of world niobium sales and is the most saleable niobium product.
A customer and competitor analysis was undertaken taking into account confidential data supplied by consultants experience in the niobium sector. Initial discussions with offtake partners also undertaken. The ferroniobium will be marketed worldwide with the offtake agreements in place with the major steel mills in North American, Europe and some parts of Asia. In other areas sales will be through metal traders or trading houses.
Standard customer specifications shown below, along with expected specifications from the Project. The Panda specification is based on concentrate specs from testwork and theoretical modelling of the converter
<table>
<tr><th>Element</th><th>Spec (%)</th><th>Panda Hill (%)</th></tr>
<tr><td>Niobium</td><td>63.0</td><td>66.0</td></tr>
<tr><td>Iron</td><td>Balance</td><td>Balance</td></tr>
<tr><td>Aluminium</td><td><2.00</td><td>1.00</td></tr>
<tr><td>Tantalum</td><td><0.50</td><td>0.25</td></tr>
<tr><td>Silicon</td><td><3.00</td><td>2.00</td></tr>
<tr><td>Phosphorous</td><td><0.20</td><td>0.10</td></tr>
<tr><td>Titanium</td><td><2.00</td><td>1.00</td></tr>
<tr><td>Sulphur</td><td><0.10</td><td>0.04</td></tr>
<tr><td>Carbon</td><td><0.20</td><td>0.12</td></tr>
<tr><td>Manganese</td><td><0.75</td><td>0.55</td></tr>
</table>
</td></tr>
<tr><td>Economic</td><td>

The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.
NPV ranges and sensitivity to variations in the significant assumptions and inputs.

</td><td>
The financial modelling undertaken as part of the PFS indicated a net present value (NPV) of US$470M after tax and an internal rate of return of 56% after tax. The key financial parameters include:
<table>
<tr><th colspan="2">Summary Financial Data</th></tr>
<tr><td>NPV_{10} (before tax)</td><td>US$708M</td></tr>
<tr><td>IRR (before tax)</td><td>71.1%</td></tr>
<tr><td>NPV_{10} (after tax)</td><td>US$470M</td></tr>
<tr><td>IRR (after tax)</td><td>56.5%</td></tr>
<tr><td>EBITDA/annum (LOM)</td><td>US$103M</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>Payback Period</td><td>1.5 years</td></tr>
<tr><td>Av LOM Production</td><td>4,600t Nb (6,800t FeNb)</td></tr>
<tr><td>LOM</td><td>30 years</td></tr>
</table>
The PFS Study results and production targets reflected in this announcement are preliminary in nature as conclusions are drawn from partly from Indicated Mineral Resources and partly from Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated or Measured Mineral Resources or that the production target itself will be realised.
Sensitivity analysis on product pricing, Opex costs and recovery are summarised in the graph below:


</td></tr>
<tr><td>Social</td><td>The status of agreements with key stakeholders and matters leading to social licence to operate.</td><td>
The Project lies within the boundary of a minimum security prison farm. As such, the Tanzanian Prisons Service (TPS) is the major social stakeholder in the project. Cradle has a good relationship with the TPS and is in discussions to move some prisons buildings and accommodation. The costs for this is included in the PFS capital costs.
As part of the ESIA study by MTL, consultation has been held with stakeholders within the broader are of the project, no material issues have been identified to date.
The EISA Terms of Reference have been agreed with the National Environmental Management Council and an updated document is expected for submission by Q2 2015.
</td></tr>
<tr><td>Other</td><td>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:
Any identified material naturally occurring risks.
The status of material legal agreements and marketing arrangements.
The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</td><td>
An Ore Reserve has not been declared.
A number of recommendations have been identified as part of the PFS study and these will be incorporated into the next study stage. The next study phase will investigate a 1 to 1.5Mtpa operation to optimise capital costs and allow for aa smaller entry into the market taking into account anticipated demand, expansion plans of the other producers and the needs of potential off takers. The opportunity to increase the production as the world demand grows will also be considered.
The Project can be affected by heavy rain events, the mining fleet selected would be appropriate for these conditions. As the Project is on a hill, dewatering is not expected to be a major issue.
The project has an existing Mining License Granted until November 2016. Cradle has been in discussions with the Tanzanian Government to allow for a further 10 year extension to the License and intends to submit the document well in advance of the normal submission date. Cradle is not aware of any reason why the license renewal should not occur.
The Project must be access through TPS controlled grounds. Cradle is in advanced discussions with the TPS, and the Tanzanian Government and has no reason to believe that ongoing access will not occur.
</td></tr>
<tr><td>Classification</td><td>The basis for the classification of the Ore Reserves into varying confidence</td><td>An Ore Reserve has not been declared.</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	
Audits or reviews	• The results of any audits or reviews of Ore Reserve estimates.	**An ore Reserve has not been declared.** The Study has been reviewed internally and by consultants for Cradle.
Discussion of relative accuracy/ confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. • It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	**An Ore Reserve has not been declared.** The relative accuracy of the Study Capital cost is +25%- 15%; this is based largely on the design work undertaken by MDM consulting for a 2Mtpa process plant and relevant infrastructure. The project size is sensitive to the world demand for ferroniobium and has been tailored to enter the market in such a way as to optimise value for the product. All relevant modifying factors have been applied to the design mining shapes on a global scale. Additional geotechnical work is required to finalise plant design parameters; and to finalise pit wall slope parameters. Tis work will be undertaken in 2015. An aerial Lidar survey will need to be undertaken prior to the final study and has been planned. The results of the pilot plant will need to be incorporated into the final study. Infill and extensional drilling from November/December 2015 is currently being incorporated into a revised Mineral Resource estimate. This revised Mineral Resource estimate is expected to have increased levels of confidence and will be used for future DFS study purposes. No recent production has occurred on the project.