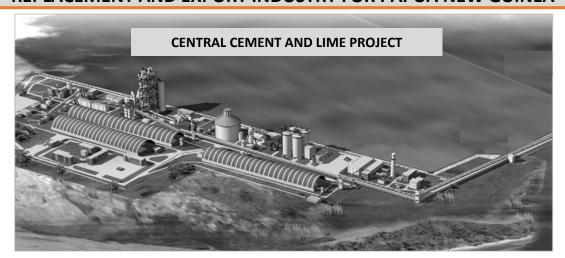




### **ASX RELEASE**

24 January 2019

# FOR THE CENTRAL CEMENT & LIME PROJECT: A NEW IMPORT REPLACEMENT AND EXPORT INDUSTRY FOR PAPUA NEW GUINEA



#### **Key DFS outcomes:**

- New long-life, low-cost, coastal Tier 1 cement and lime manufacturing plant for domestic consumption and nearby export markets
- Located in Central Province, 7km from PNG LNG and 25km from Port Moresby, PNG's national capital
- PNG's first vertically integrated clinker and cement plant enabling domestic consumers to buy locally produced, lower cost cement and lime products, reducing reliance on imports
- Initial production target of **1.65 Mtpa of clinker**, incorporating **907,500 tpa cement** grinding capacity, and **198,000 tpa of quicklime**
- Excellent project economics, post tax NPV (9%) of USD 352 m, IRR of 23.9 % and project payback of 5.2 years<sup>1</sup>
- Project capital cost estimate of USD 331 m, determined from DFS engineering and EPC bids received for delivery of the fully integrated project (quarry, clinker/cement plant, quicklime plant with associated dedicated power and marine infrastructure)
- Highly competitive estimated operating costs for clinker, cement and quicklime
- Forecast life-of-project revenue of USD 4,792 m and project EBITDA of USD 3,540 m over an estimated 30-year project life
- Maiden Ore Reserve of 78 Mt of limestone and 14 Mt maiden Mineral Resource for correctives within Project area to support the 30-year project, with quarrying rate of 3.1 Mtpa with zero strip ratio to provide feed to the clinker/cement and quicklime plant

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 $<sup>^{1}</sup>$  NPV, IRR and project payback are non-IFRS measures, refer to Appendix at the end of this release.



- All clinker manufacturing raw materials (limestone, silica and alumina correctives) available in close proximity to the plant and within the Project tenement
- Many decades of JORC Measured Resources in back up inventory enabling opportunity for future plant duplication
- Environmentally Permitted with robust Environmental Management Plan
- Documented support for the project from State and Provincial Government

#### **NEXT STEPS:**

- Conclude compensation arrangements with the local community
- Submit Mining Lease application in H1 2019
- Award of EPC design and engineering contracts, finalise product offtake and project financing arrangements by H2 2019

Mayur Resources Ltd (ASX:MRL) (the Company) is pleased to advise it has completed the Definitive Feasibility Study (DFS) for the Central Cement and Lime Project (the Project), located 25 km north of Port Moresby, PNG as shown in Figure 1. The Project anticipates the quarrying of extensive limestone deposits and the downstream production of clinker, cement and quicklime for both domestic and export markets. The Project also includes the construction of supporting infrastructure including a dedicated power station and sole purpose marine wharf facility adjacent to the plant site that will provide significant operational and logistical advantages.

The robust outcomes from the DFS have incorporated the outputs from an EPC (engineering, procurement and construction) tender process initiated in late 2018, and other project DFS engineering and development activities completed over the last 18 months<sup>2</sup>. This outcome now provides a strong platform for the Company to submit its application for a Mining Lease for the quarrying operations, and complete the next steps of detailed engineering design, product offtake and project financing that will enable a financial investment decision and a target commencement of construction by late 2019.

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<sup>&</sup>lt;sup>2</sup> Refer to ASX announcement dated 21 September 2018 – 'tender documents issued for the Central Cement and Lime Project'



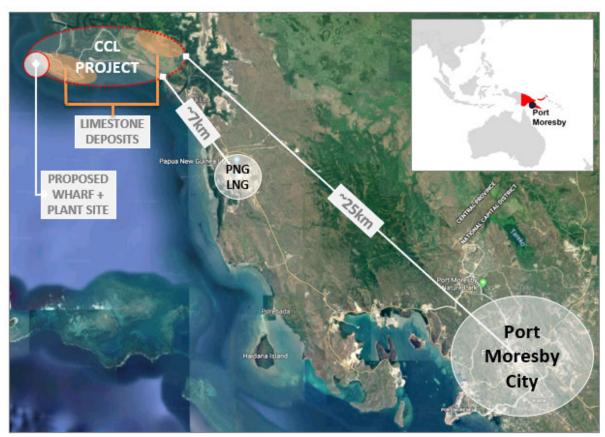


Figure 1 - Project Location near to Port Moresby

#### **BACKGROUND**

The Company's strategy for the project aligns with the desire of the PNG government to not only diversify the country's extractive industries, but also, add value to its vast mineral wealth through vertically integrated projects via new import displacement industries that are nation building in nature and also serve as exporting operations to increase foreign currency inflows.

The Project seeks to achieve this via the downstream processing of the limestone resources and the production of cement and lime products, these being key nation building commodities. PNG currently imports all cement and clinker and significant quantities of quicklime hence the Project will provide PNG with in country industrial manufacturing capability with which to reduce and replace dependence on imports and provide a new export industry to help improve PNG's balance of trade. The Project's position in the Company's portfolio is illustrated in Figure 2.



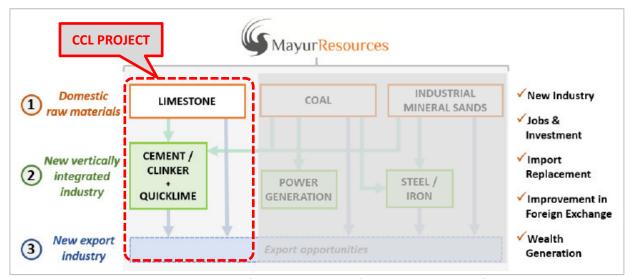


Figure 2 – CCL Project's position in Mayur's nation building portfolio

#### **DFS OVERVIEW**

The DFS indicates that the Project will be robust and deliver healthy margins with current forecast life-of-project (LOP) revenue of **USD 4,792m** and LOP Project EBITDA<sup>3</sup> of **USD 3,540m** over an estimated 30-year project life. This is supported by a 78 Mt Ore Reserve that has been taken from the larger JORC Resource of 382 Mt that will potentially enable both the future duplication expansion of the Project's cement and quicklime plant capacity and also an extension of the project life beyond 50 years. In addition to the limestone Reserve the Company has also delineated a new Mineral Resource of 14 Mt (JORC) for cement making correctives material.

A summary of the key DFS outcomes is provided below in Table 1:

Table 1 - DFS outcomes

Study Outcomes <sup>4</sup>	
Estimated Life of Project (LOP)	30 years
Project CAPEX	USD 331 m
Post-tax NPV (9%) Real, ungeared	USD 352 m
Internal Rate of Return (IRR)	23.9 %
Project payback	5.2 years

Mayur Managing Director Paul Mulder commented "the completion of the highly encouraging Definitive Feasibility Study for the CCL Project within just 12 months of our maiden JORC in January 2018 has been a huge achievement. We have delivered on our commitments set out in the capital raise in April 2018 and after a period of intense activity from our highly experienced team, we now have a solid base case that paves the way for delivering both a nation building project for PNG and an extremely important project in Mayur's portfolio"

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<sup>&</sup>lt;sup>3</sup> EBITDA is a non-IFRS measure and is calculated as operating profit before interest revenue, finance costs, depreciation and amortisation and income tax expense

<sup>&</sup>lt;sup>4</sup> The Company is not able to disclose forecast product sales prices or operating costs due to the commercial in confidence nature of this information and the potential negative competitive impacts if such information is disclosed. The Company has independent pricing and costing assumptions that underpin the forward-looking revenue statements



"Now that the definitive feasibility study is complete we are positioned to submit our proposal for development to the Mineral Resource Authority and seek approval of a Mining Lease for the project and also finalise compensation agreements with the local community."

"Moreover, given the nature of the Project, there are still additional opportunities to further enhance value, reduce costs and value engineer the current project whilst building the CCL project to enable future expansion thus increasing production, refining of the product mix between clinker and cement, develop new markets and even supply of raw material aggregates and building materials for the local construction market"

Mulder added "Mayur is committed to significantly lowering the price of cement in PNG over the operational life of the Project. Progressive price reductions will positively impact the economy reducing the cost of infrastructure and residential housing all being cheaper to build, ultimately making PNG a cheaper place to live, do business and attract foreign investment".

#### **DFS OUTCOMES**

#### **Delivery Team**

Given the integrated nature of the project, the Company assembled a multi-disciplined team of industry and technical experts from around the world to advise and input the various key aspects of the DFS as outlined in Table 2 below.

Table 2 - DFS key delivery team members

Area	Consultant
DFS lead and study management	Siecap Pty Ltd
Resource and Reserve Estimation	Groundworks Plus
Mine (Quarry) Planning and Design	Groundworks Plus
Geotechnical	Groundworks Plus
Clinker and Cement Plant Design	THA Advisors
Quicklime Plant Design	RD Engineering
Marine and Port Design	PRDW
Environmental	Coffey / Tim Omundsen
Social	Ray Weber Associates
Financial Modelling and Evaluation	Siecap Pty Ltd

#### **Products and Marketing**

The Project involves the industrial manufacture of several products namely clinker, cement and quicklime via the extraction and processing of limestone and other supplementary raw materials. All products will be manufactured to industry specifications. A key assumption is therefore the sales and marketing volumes for the products as summarised below in Table 3.



Table 3 - DFS Initial Products and Production targets

Product	Description / Specification^	Volume (tpa)	Target Market
Clinker*	Material that is suitable for cement manufacture according to AS 3972-2010.	825,000	<b>EXPORT</b> (Australian East Coast)
Cement	Material that meets AS 3972- 2010.	907,500	DOMESTIC (PNG) and EXPORT (Australian East Coast)
Quicklime	Material that meets AS 1672.1 (Lime for Building)	198,000	DOMESTIC (PNG) and EXPORT (Australian East Coast)

<sup>^</sup> AS = Australian Standards, recognised in PNG; \* Total clinker production will be 1.65Mtpa, with 825,000tpa of this to be sold as clinker and the remaining clinker used to produce 907,500 tpa of cement.

#### **Clinker and Cement Marketing**

The Project will initially produce 1.65 Mtpa clinker, of which 825,000 tpa will be in clinker sales and the remainder of the clinker will be further processed to produce 907,500 tpa of cement. The Company's marketing plan involves a combination of domestic sales (local market penetration and import displacement) and export to Australia.

#### Domestic (PNG)

There are currently no clinker or integrated cement production plants in PNG, with all supply currently imported from Asia. There is a small cement grinding plant in Lae, PNG's second largest city in the north of the country, and cement is imported into Port Moresby in bulk and bagged for the local market.

Demand for cement in PNG is currently estimated at 400,000 tonnes per annum, this is low on a per capita basis and it is anticipated to increase in the future, driven by various factors including GDP and population growth, construction related to infrastructure, resources, agriculture and forestry projects. Refer to Figure 3 for further illustration of PNG's cement consumption position on a per capita basis.

As such the Company's market forecasts anticipate a 5% year on year growth in cement sales volumes for the domestic market. This will be achieved by a progressively increasing the amount of clinker that is processed into cement and thus reducing the raw clinker production over the life of the Project.



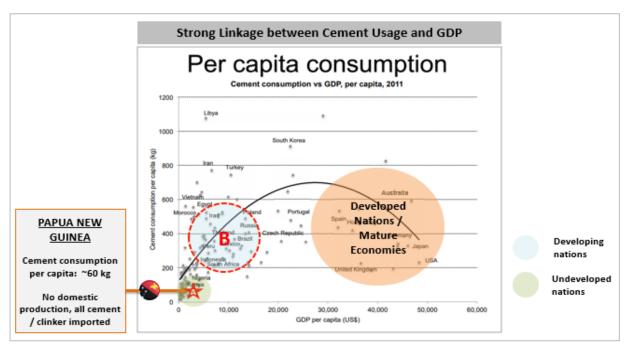


Figure 3 – PNGs position on a cement consumption per capita basis

The Company's price assumptions for domestic cement and clinker sales in PNG are based on local industry intelligence and extensive market research. In PNG, where current demand volumes are lower than exported volumes, the Company plans to be a cement wholesaler and can therefore command prices in line with PNG domestic wholesale cement prices/suppliers (albeit at a lower price than these domestic competitors but still significantly higher prices for the exported product where demand volumes are much higher).

In order to penetrate the PNG market, the Company has therefore applied discounts to its forecast bulk and bagged cement prices. A key benefit for PNG from the in-country Project will be a reduction in the price of cement that will be produced in PNG, with prices progressively reduced further over the Project's life.<sup>5</sup>

#### Export (Australia)

All the clinker and around 50% of the cement produced by the Project is planned to be sold to customers in Australia, predominantly the east coast demand centres of Brisbane, Sydney and Melbourne.

Cement demand continues to remain steady in Australia, yet domestic clinker production is declining and is being replaced by imports from Asia, thus presenting a key opportunity for the Project as shown in Figure 4.

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<sup>&</sup>lt;sup>5</sup> The Company is not able to disclose forecast product sales prices or operating costs due to the commercial in confidence nature of this information and the potential negative competitive impacts if such information is disclosed. The Company has reasonable grounds for the pricing and costing assumptions that underpin the forward-looking revenue statements.



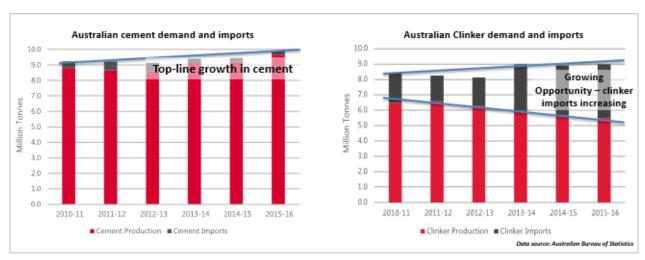


Figure 4 - Australian cement and clinker demand

With the Project being only 6 days sailing from Australia's largest cementitious demand markets, this also places the project at a significant freight advantage to other Asian suppliers, as shown in Table 4.

Table 4 – Sailing times to East Coast Australia (PNG's advantage)

PNG to East Coast Australia	Vietnam to East Coast Australia	Japan to East Coast Australia		
6-7 days	19-21 days	19-21 days		

The Project's attributes of relative proximity to the Australian market, key cement making raw materials being available in large quantities at surface right on the coast next to deep water, the ability to produce a low alkali clinker acceptable to the Australian market, reduced risk of product packing and contamination from a shorter travel time thus provides an FOB cost proposition that provides a compelling case for the development of the project and a credible, reliable, cheaper, closer and more diversified supply line to customers in markets such as East Coast Australia.

Sales prices of clinker and cement, unlike mainstream commodities such as gold, copper, coal and iron ore, do not follow transparent publicly published indexes therefore sales price forecasts for FOB clinker, and cement have been based on a combination of price data from Asian based trading companies, published trade journals, internal company sources and Australian Bureau of Statistics (ABS) data. Independent consultants were also commissioned by the Company to undertake a marketing study to review and validate this information. This was compared to the Company's own market intelligence which determined that current spot prices were approximately USD55/t CFR for clinker and USD65/t CFR for cement. In addition, the Company's freight estimates were informed by a number of sources including a ship broker freight study and in-house knowledge of freight costs which were used to validate the FOB and CFR price estimates.

While the profit margin into the Australian market is lower than the PNG domestic market, the larger sales volume pulling through from the Australian market, provides the critical economies of scale required to justify the Project.

For export to the Australian market, the Company plans to position itself as an 'ex-factory'



primary supplier to the Australian based incumbent wholesalers, thus commanding a lower sales price relative to the prices achieved for domestic sales as the Company is not planning on acting as a wholesaler in Australia. The Company has entered into confidential discussions with a number of potential customers in Australia for imports of cementitious products and has adopted a discounted pricing strategy to enable market penetration.

#### **Quicklime Marketing**

The only quicklime production in PNG is for captive purposes with the large majority of all quicklime demand being imported from Asia and or the Pacific region.

The Company's marketing plan involves a focus on local market penetration and import displacement. The Project plant will produce 198,000 tonnes per annum of quicklime. Demand for quicklime in PNG is around 150,000 tonnes per annum predominantly from the mining industry for use in mineral processing.

The balance of the quicklime production, around 50,000 tonnes per annum is planned to be sold to customers in Australia, predominantly the east coast demand centres. As the Australian market is over 2 Mtpa, any excess supply from the Project will be able to be absorbed by this demand which is also currently satisfied in part by internationally imported products from Asia.

As with clinker and cement, sales prices for quick lime do not follow transparent publicly published indexes therefore sales price forecasts for FOB quick lime have been based on a combination of price data from internal company sources and Independent consultants were also commissioned by the Company to undertake a marketing study to review and validate this information.

#### **Mineral Resources**

The Project is located within Exploration Licence (EL) 2303 that hosts extensive limestone and corrective deposits. The Company declared a maiden JORC Resource of 382 Mt across two domains, namely Kido and Lea Lea, in January 2018.<sup>6</sup>

In addition to the limestone, there is also a requirement for 'corrective materials', being silica and alumina. These raw materials are required for the clinker and cement manufacturing process. The company has conducted exploration work within EL2303 to identify local sources of these corrective materials. This exploration program was undertaken as a combination of surface auguring and diamond drilling and has confirmed large quantities of silica and alumina material at surface with depth extension. The location of these corrective material deposits (East Lea) is shown below in Figure 5.

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<sup>&</sup>lt;sup>6</sup> Refer to ASX announcement dated 18 January 2018 for the maiden JORC at the Central Cement and Lime Project other than the information included in this announcement, the technical and other assumptions used in the JORC Resource remain relevant



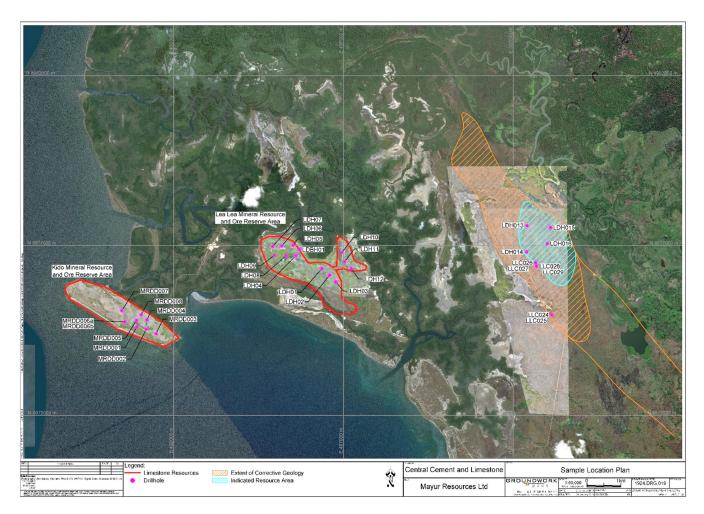


Figure 5 - Limestone (Kido and Lea Lea) and Corrective Materials (East Lea Lea) deposits and drilling

Refer to **Annex A** for the Drill hole results for the East Lea Lea Correctives area.

A revised Mineral Resource estimate, that now includes 14 Mt of Indicated Resource at East Lea Lea is shown in Table 5 below.



Table 5 - Central Lime and Cement Project Mineral Resource Estimate 2019

#### **MEASURED MINERAL RESOURCE ESTIMATE\***

Area	Category	CaO cut off %**	Tonnes	CaO %	Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Lea Lea	Measured	52%	61,000,000	53.4	0.6	1.65
Kido	Measured	52% 144,000,00		53.6	0.62	1.77
Total	Measured	52%	205,000,000*	53.5	0.61	1.73

#### **INDICATED MINERAL RESOURCE ESTIMATE\***

Area	Category	CaO cut off %**	%** Tonnes		Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Lea Lea	Indicated	50%	117,000,000	51.8	0.9	2.7
Kido	Indicated	50%	11,000,000	51.5	0.6	1.1
Total	Indicated	50% 128,000,000		51.8	0.9	2.6
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Area	Category	CaO cut off %**	Tonnes	CaO %	Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
East Lea Lea Correctives	Indicated	-	14,000,000	1	13.6	74

#### **INFERRED MINERAL RESOURCE ESTIMATE\***

Area	Category	CaO cut off %**	CaO cut off %** Tonnes		Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Lea Lea	Inferred	48%	7,000,000	48.1	1.1	2.5
Kido	Inferred	48% 42,000,000		48.4	1	1.8
Total	Inferred	48%	49,000,000	48.3	1	1.9

<sup>\*</sup>Minor rounding errors apply pursuant to JORC 2012. \*\*The cut-off grade for the Measured Mineral Resource is based on a commonly accepted CaO grade for the production of lime and quick lime.

## **Mining and Ore Reserves**

The proposed mining (quarrying) method for each deposit is shown in Table 6 and the Project general layout is shown in Figure 6.

Table 6 - Deposits and proposed mining method

Deposit	Characteristic	Extraction methodology
Kido Limestone Deposit	Generally higher-grade limestone more suited to the production of quicklime	Blasting and ripping, then haul to stockpiles at plant site
Lea Lea Limestone Deposit	Generally lower grade limestone more suited to the production of cement	Blasting and ripping, then haul to stockpiles at plant site
East Lea Lea Correctives	Source of silica, alumina as a feed for the clinker / cement plant	Ripping, then haul to stockpiles at plant site



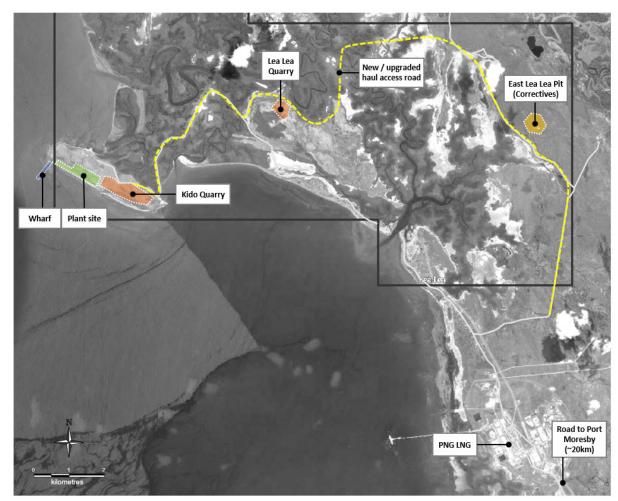


Figure 6 - Project general arrangement

Production of the target volumes will require the sourcing and use of various raw materials, in differing quantities.

Table 7 indicates the various raw materials that are required to produce the end volumes.

**Table 7– Project Key Raw Material Requirements** 

#### **Cement Plant Raw Feed Requirements**

Material	Ratio %	Moisture %	Production Rate	Production Rate
		Daily		Yearly*
Kido	42	3.5	3,400	1,122,000
Lea Lea	Lea Lea 42		3,400	1,122,000
East Lea Lea Corrective	16	3	1,400	462,000

<sup>\*</sup>Rounded to the nearest significant figure, and assuming 330 days of standard production per annum.

#### **Lime Kiln Raw Feed Requirements**

Material	Ratio %	Moisture %	Production Rate	Production Rate
			Daily	Yearly*
Limestone	100	2.8	1,212	400,000

<sup>\*</sup>Rounded to the nearest significant figure, and assuming 330 days of standard production per annum



The volume of material listed above when processed will yield approximately 825,000 tonnes per annum of clinker and 907,500 tonnes per annum of cement along with 198,000 tonnes of quicklime.

Groundworks Pty Ltd was commissioned to complete a feasibility level mining study for the extraction of limestone based on the Mineral Resource geological block model. Ore Reserves were then based on the Mineral Resource estimate and conversion into a mining model. Pit optimisation was then performed by taking primary material from both the Kido domain and the Lea Lea domain at the required tonnages for the clinker / cement plant and the quicklime plant. Supplementary material was also modelled to be extracted from the East Lea Lea correctives area.

The mining method is based on conventional open pit quarrying. A "Surpac" optimisation, (Surpac enables the quantification and evaluation of mineral deposits and planning the efficient extraction of reserves), was performed and a pit optimisation design and modifying factors applied to convert the Mineral Resources to the Ore Reserves.

Resultant of the mine planning, costing and scheduling works, along with consideration of the modifying factors, the limestone has been upgraded to Ore Reserve status as shown in Table 8. Whilst the Correctives Area has been delineated initially as an Indicated Resource, it will be upgraded with appropriate modifying factors in the near future.

SiO<sub>2</sub> CaO  $AI_2O_3$  $Fe_2O_3$ K<sub>2</sub>O MgO Na<sub>2</sub>O LOI Million % % % % % % % % Area Reserves **Tonnes** Kido\*\* 0.04 Probable 45 54 0.5 0.3 0.4 0.2 1.3 43 Lea Lea\*\* Probable 33 44 4.5 3 0.3 2.2 0.3 9.5 36 Total 78

Table 8 - Ore Reserve Estimate\*

Mining this project, is more akin to civil earthworks or a quarrying operation, as the limestone Reserve areas are two large, homogenous hills which will be gradually extracted and processed over the project life. The correctives Mineral Resource area is a low rise of colluvial hills which has an outcrop extent greater than 15 kilometres strike length.

Key parameters used as part of the pit optimisation process included (but not limited to) the following:

<sup>\*</sup> All categories of material and geochemical values rounded to the nearest significant figure \*\*Minor rounding errors may occur pursuant to JORC 2012 reporting requirements. The reported grades are based on a suitable blend mix for the production of raw meal suitable for the production of cement, clinker and a variety of lime products. High grade raw feed for the production of lime will be initially sourced from Kido however is also available in very large quantities at Lea Lea. Importantly Ore Reserve estimates are not precise calculations



- A total mining rate of 3.1 million tonnes per annum.
- A base mining cost of USD2.20 per tonne of raw feed material exclusive of haulage rates.
- Owner operator cost model used for estimation of operating costs.
- 330 days production per annum using two nine-hour shifts.
- Extraction will use conventional drill and blast and loading via excavator direct to haul trucks from Kido, which is the main source of material in the first 30 years of the project. Bench heights are 15 meters with a design batter angle used of 70 degrees for terminal benches while operational batters will vary between 70 and 85 degrees as needed.
- A front-end loader will blend from the ROM as needed.
- Road train delivery of materials from Lea Lea and the silica corrective area until the silica corrective materials at Kido are further assessed
- Mining recovery factors are set at 95% which makes allowance for a loss of 5% material. Dilution is not factored in as all the material in the pit shells can be used as raw feed. Dilution while a problem in most mines is not envisaged to be a material problem for this project as this project is principally extracting two very large hills which consist solely of limestone and variations on limestone. This is also the case for the marl and silica corrective units which are regionally significant, thick and homogenous geological units.
- Cut off grades for relevant elements for lime and lime products are shown in Table 9 below

Table 9 - Chemical Composition of Raw Materials Lime Kiln

Material	CaO	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	MgO	K₂O	Na₂O	SO₃	CI	LOI	Total
Limestone	54.5	1.5	0.5	0.4	0.4	0.05	0.1	0.01	0.01	42.5	100*

The proposed raw feed grade for the production of cement materials is provided in Table 10
however cement is a blend of materials and does not have a cut-off grade per-se but is
determined by the raw feed grade requirements. The quality parameters applied or relevant
to this project, are the relevant Australian and International standards for the production of
cement and lime products

**Table 10 - Chemical Composition of Raw Materials Cement** 

Material	CaO	SiO <sub>2</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	MgO	K₂O	Na₂O	SO <sub>3</sub>	Cl	LOI	Total %
Limestone	54	1.7	0.5	0.3	0.1	0.1	0.1	0.1	0.1	43	100
Marl	30	42	13	5	0.6	0.1	0.1	0.1	0.1	9	100
Iron Oxide	5.5	6.5	1.6	85	0.1	0.1	0.1	0.1	0.1		99.1*
Silica	3	90	2	2	0.4	0.4	0.5	0.1	0.1		98.5*



- \* The remainder to 100% is made of trace minerals which do not have a material impact on feed quality.
- No Inferred Resources are considered in the mining schedule
- Metallurgical test work including decrepitation tests for quicklime and industry expert assessment of the raw materials have confirmed suitability of the material to meet the stated product specifications for clinker, cement and quicklime
- In considering the modifying factors it is the opinion of Groundwork that all relevant modifying factors, can be, or are in the process of being suitably resolved, or in the case of tenure and environmental approvals, have a very high probability of being upgraded to the requisite level of approval. In summary there are reasonable grounds to expect that such approvals, contracts and other commercial issues as needed to commence mining will be resolved within the time frames provided by the Company

For further detail please refer to JORC Table 1 in Annex B

#### **Project Process Flow Overview**

Figure 7 illustrates the overall process flow for the project. As can be seen the quarrying operation is just the first stage in the process, providing the raw materials (i.e. limestone, correctives etc) for the manufacturing process. The quicklime plant requires the higher-grade limestone than the clinker and cement making process, that can be blended as required.

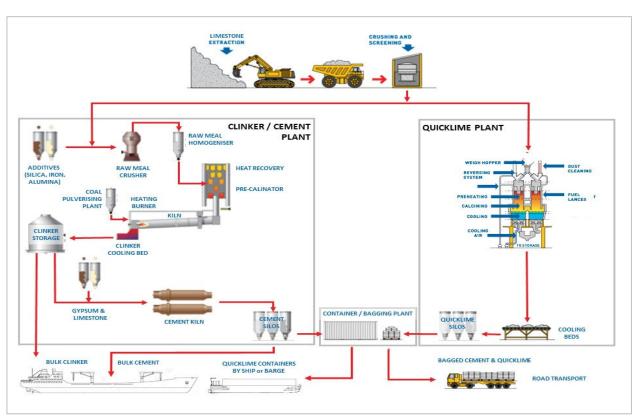


Figure 7 – Simplified project process flow diagram



#### **Clinker, Cement and Quicklime Manufacture**

The entire manufacturing plant is laid out into six distinct zones according to functions as listed below and illustrated in Figure 8.

- clinker / cement plant;
- quicklime plant;
- power plant;
- accommodation / office area;
- raw material storage / industrial support sites;
- wharf area

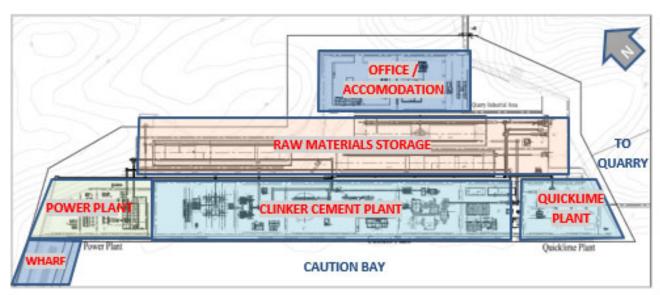


Figure 8 – Kido plant and infrastructure site general layout (indicative only)

The cement plant is divided into three parts as follows:

- Raw materials preparation area. This area includes the limestone crusher, limestone preblending storage, silica sand crusher, correctives and additives pre-blending storage, fuel storage etc.
- **2. Main production area**. This involves a 5000t/d clinker production line from raw material proportioning station to clinker storage. In this area there are raw material proportioning station, raw mill, exhaust gas treatment, blending silo & kiln feeding, preheater, kiln and tertiary air duct, cooler, clinker bulk loading and clinker storage etc.
- **3.** Cement grinding and dispatching area. This area includes a cement proportioning station, cement grinding, cement silos, cement bulk loading and cement packing, dispatching etc.



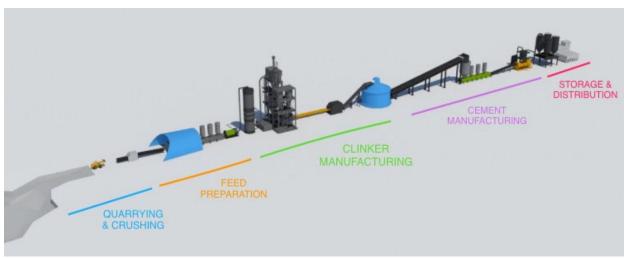


Figure 9 - Simplified plant layout for clinker and cement line (for illustrative purpose only)

The quicklime production line includes the limestone crushing workshop, limestone silo and vertical kiln etc. The production of quicklime begins with the quarrying and crushing of limestone. The high purity limestone will be primarily used for producing quicklime in the lime kiln. A twin vertical Shaft Kiln is sized to produce 198,000 tons per annum of reactive quicklime.

Limestone fills the shafts from the top. Hot combustion gases are fired down the first shaft, calcining the lime. The exhaust then flows across and up through the second shaft, preheating the lime.

The lime is cooled in the bottom section of each shaft with a counter-current flow of air. Finished lime exits from the bottom of each shaft. This process can be seen in Figure 10.

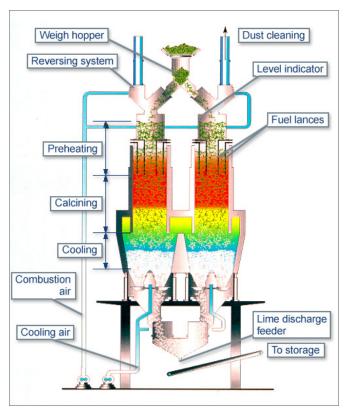


Figure 10 - Typical Twin Shaft Vertical Kiln



#### **Utilities and Infrastructure**

The Project is a greenfield site and currently does not have any infrastructure to support the proposed mining and clinker, cement and quicklime manufacturing plant. The major infrastructure that is required includes the following:

- Construction of a dedicated wharf comprising a causeway and piled pier and jetty that will
  enable loading of bulk carriers and shallow berths to enable container and bulker bag loading
  of shallow draft coastal ships and barges. Berthing amenities will facilitate the unloading
  (import) of supplies and other materials (e.g. gypsum for cement manufacture) for the
  Project
- Construction of a 36 MW dedicated power station to meet the Projects power requirements.
   This is based on a thermal Circulating Fluidised Bed combustion (CFBC) conventional power station, with an alternative option to use gas.
- Construction of roads to access the site from the existing public road network
- Other miscellaneous buildings such as accommodation and workshops

All the above will be delivered as works packages by the proposed EPC contractor and all of the above have been included in the estimated capital costs for the project.

Freshwater demand for the project is planned to be met from the nearby Laloki River located within the current Exploration Licence boundary, approximately 12 km inland from the proposed Kido plant site. Water intake pump station will be installed at a suitable location.

#### **Capital and Operating Cost Estimates**

The capital cost estimates for the Project are presented at a summary level in Table 11. Contingency of 10% has been included within the direct cost estimates. Pre-production/ pre-FID cost allowances have also been factored into the owners' costs.

Table 11 - CAPEX estimate

Area	USD m	Source
Quarry	9.64	Derived from EPC bid returns and other verified sources
Cement/Clinker plant	181.16	Derived from EPC bid returns and other verified sources
Quicklime plant	19.92	Derived from EPC bid returns and other verified sources
Power station	50.75	Derived from EPC bid returns and recent comparable EPC bid project.
Wharf	54.93	Derived from EPC bid returns and recent comparable project.
Access road	3.53	Estimate based on recent similar construction in PNG.
Fresh water supply	1.76	Siecap estimate based on external equipment quotation
TOTAL Direct Costs	321.69	



Area	USD m	Source
Owners costs	9.65	Estimate based on 3% of direct costs
Contingency	Inc.	10% included within above capital estimate direct costs
Total	331.34	

The capital costs have been prepared with an overall accuracy of  $\pm$  15%, which is commensurate with the accuracy level of the study undertaken.

Operating costs for the Project have been prepared for the main cost centres as follows:

- Mining (Quarrying) and Haulage
- Processing (clinker / Cement / Quicklime)
- Power
- Maintenance
- Wharf Operations
- Indirects

The total of the above costs then provide a C1 Cash Cost on a 'Free on Board' (FOB) basis. The C1 Cash Costs (FOB) have been estimated based on a combination of 'bottom up' first principles cost modelling and independent cost estimates. The first principles approach has considered all key cost drivers, including the total power requirements (based on OEM / EPC data), fuel cost (based on KPMG published long term fuel price outlook data) and labour costs (supplied by independent in-country labour services provider). Mining and haulage costs have been provided by Groundworks as disclosed in this announcement. C1 Cash Costs have also been benchmarked against published major cement manufacturers to ensure consistency.

The Company is not able to disclose the forecast operating costs (on a \$ per tonne basis) due to the commercial in confidence nature of this information and the potential negative competitive impacts. Such information is critical to negotiation of sales contracts, and if known to the limited customer base (wholesale cement and clinker customers are less than 20 in the region) it will significantly reduce the negotiating strength of the Company.

#### **Financial Evaluation**

The financial evaluation approach has involved the use of a standard Discounted Cashflow (DCF) methodology to generate a Net Present Value (NPV) for the Project. The key financial outcomes together with the key parameters and assumptions are set out as follows:

**Table 12 - Project NPV** 

Basis of cashflows	Key results	Ungeared	Geared
	NPV (@9%)	US\$ 352 million	US\$ 397 million
Real	IRR	23.9 %	39.5 %
	Payback Period	5.2 Years	3.2 Years



Basis of cashflows	Key results	Ungeared	Geared
	NPV (@9%)	US\$ 505 million	US\$ 535 million
Nominal	IRR	26.4 %	42.3 %
	Payback Period	5.0 Years	3.1 Years

Table 13 - Project NPV at various discount rates

Discount Rate (real)	NPV – Ungeared USD m	NPV – Geared US USD m
5.00%	710	728
8.00%	419	459
9.00%	352	397
10.00%	297	346

NPV sensitivity analysis has been completed for the USD352m NPV case and is presented as a tornado chart in Figure 11.

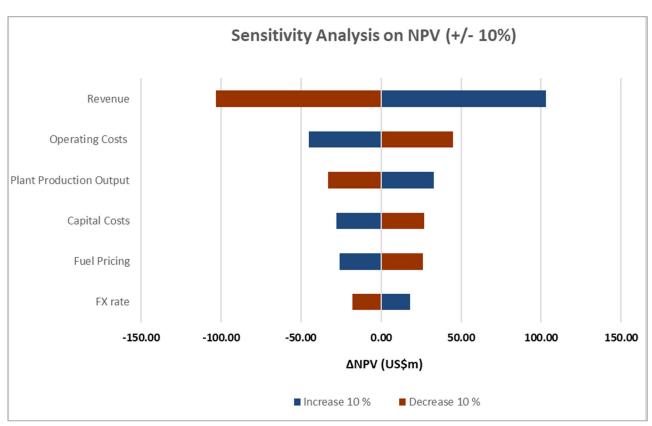


Figure 11 – Sensitivity Analysis (change in NPV)

As shown above the Project is most susceptible to fluctuations in revenue / product pricing. The assumptions used in the financial model include, but are not limited to, the following:

- Discount rate of 9% on post-tax cashflows
- Project life of 30 years
- Taxation rate of 30% applied with seven-year waiver as a new industry establishment incentive



- PNG Royalty of 2.25% based on an ex-quarry effective sales price methodology
- Project developed on a turn-key EPC basis
- Straight-line depreciation based on a 10-year period
- The ungeared model assumes the capital requirement (USD331m) is funded on an 100% equity basis
- For the geared model, it is assumed that 70% of the capital requirement (i.e. USD232m) is funded via a debt facility at 5% per annum interest, with the remaining 30% (i.e. USD99m) to be funded via equity<sup>7</sup>
- Inflation for the nominal version of the model of 2.0% has been applied to sustaining capital costs, operating costs and commodity prices for the geared nominal models
- Exchange rate of USD:Papua New Guinea Kina (PGK) of 0.3:1

To the extent that equity finance is utilised to fund the capital requirements for the project, this may result in a dilution of the ownership interests of the Company's existing shareholders. The Company is actively examining debt funding options which would reduce the potential dilutionary effect of project funding on the ownership interests of the Company's current shareholders.

#### **Environmental and Social Assessment**

The Company has secured an Environmental Permit for the Project following assessment by Conversation and Environmental Protection Authority (CEPA). The permit has been granted for a standard term of 25 years, that will be subject to renewal thereafter under the normal statutory process.

An Environmental Management and Monitoring Plan (EMMP) also been prepared, submitted and approved by CEPA, in accord with the requirements of the environmental permit. This will be used to manage compliance with the permit conditions and any subsequent renewal thereof.

The EMMP provides a framework for management of identified environmental impacts and implementation of measures to effectively avoid, reduce or offset these impacts and will continue to be developed as such things as environmental and social baseline information becomes available, the significance of potential impacts is determined, and design process for the Project continues.

The company has completed extensive landownership studies across the project area that includes the villages of Kido and Lea Lea.

In conformance with the requirements of being granted a Mining Lease (ML) for the Project, the Company will need to finalise a benefits package and compensation arrangements with the

<sup>&</sup>lt;sup>7</sup> **Debt and Project Financing** - Project debt scenarios have been assessed using a gearing ratio of 70% debt to 30% equity. Financing assumptions used were based on recent transactions in the resources sector in Papua New Guinea / comparable jurisdictions and therefore reflect current market conditions. Given that the project meets typical bank debt service cover ratios and reserve tail requirements under those assumptions, the Company's view is that the project will be able to secure the necessary debt funding on suitable terms to enable successful financial closure in due course, and will consider export credit agencies and commercial banks.



identified land owners. This work has commenced and is expected to continue in H1 2019 and will be informed both by statutory obligations (PNG Valuer General) and industry practice.



Figure 12 - Landscape near to Kido plant site (PNG LNG in the distance to the right)

#### **Project Benefits**

The Project aims to deliver a number of benefits to PNG at various levels these are summarised below in Table 14.

#### **Table 14- Potential project benefits**

#### **Potential Benefits from the Project**

Over 1000 jobs during construction, 300 direct jobs once in Operation and various other indirect flow on jobs and employment opportunities

Royalties of 100 million Kina (USD30m) over the life of the Project

Corporate Tax Revenue of 5 billion Kina (USD 1.5 billion) over the life of the Project

Landowner Spin Off Businesses – catering, earthworks, logistics, camp management

Enable access to road, water and electricity infrastructure as per Land Owners Agreement

Potential for improved health and education services between Mayur Industrials and Government.

Cheaper Cement and Quicklime Supply for PNG's Nation Building once business is established

Stemming foreign currency out flow reducing the buying of imported cement & lime

Increasing foreign currency inflows exporting part of production receiving new and ongoing USD revenues into PNG



#### **Project Execution**

An engineer, procure, supply, construct, commission (EPC) proposal including a guaranteed maximum price (GMP) strategy has been selected for the Project as a package of works as described above.

The EPC project delivery mechanism requires only supervisory control throughout the implementation phase and the Company's project team has the key role of contract management.

The proposed key Project execution milestone dates are shown below in Table 15 with scheduled first production sales at the end of 2021. This is dependent on the commencement of construction in 2019 which is turn is conditional on the granting of the Mining Lease and a financial investment decision (FID) occurring in Q3 2019.

**Table 15 - Milestone Dates** 

Milestone Activity	Date (Calendar Year)
Feasibility Study Complete	Jan 2019
Mining Lease approval	Q3 2019
FID (subject to Mining Lease, Funding / Offtake)	Q3 2019
Award of EPC Contract	Q3 2019
Construction Commences	Q4 2019
Commissioning and Commencement of Production	Q4 2021

It is proposed that the EPC will be responsible for running the plant the first 2 years (i.e. through the Defects Liability Period). During this time a new workforce will be progressively developed and trained to take over the operations of the project after the 2-year period ends.

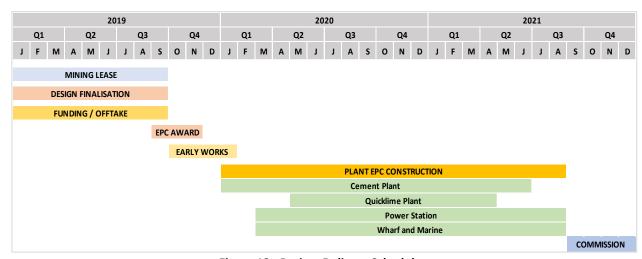


Figure 13 - Project Delivery Schedule

Upon completion of the Project the Company would manage the operations from a PNG base on-site with a small support office in Port Moresby.



#### **About Clinker, Cement and Quicklime**

#### **Clinker and Cement**

Clinker is a dark grey nodular material made by the blending of raw materials (including limestone and clay), heating this ground material at a temperature of about 1450 °C. The nodules are then ground up to a fine powder to produce cement, with a small amount of gypsum added to control the setting properties. Cement can then be mixed with aggregate and water to produce concrete slurry or moulded to produce concrete products such as pipes, box culverts, blocks, bricks, roof tiles, floor and wall tiles.

#### Quicklime

Quicklime is a chemical compound known as calcium oxide (CaO) and is made through the thermal decomposition of limestone or other materials containing calcium carbonate. Quicklime (CaO), otherwise called calcium oxide, is the product of the calcination of limestone in rotary, vertical or other specific kilns at temperatures of up to 1000°C. It consists primarily of oxides of calcium and magnesium. Quicklime can be produced in a number of sizes, ranging from lump and pebble lime to granular or pulverised lime, that is then used extensively in metallurgy to remove impurities and adjust final chemistry. Highly reactive and soluble lime is essential for pulp and paper manufacturing, water treatment and air quality management.



#### **Competent Person's Statement**

Statements contained in this presentation relating to Mineral Resources and Ore Reserves estimates for the Central Cement and Lime Project are based on, and fairly represents, information and supporting documentation prepared by Mr. Rod Huntley, who is a member of the Australian Institute of Geoscientists. Mr. Huntley has sufficient and relevant experience that specifically relate to the style of mineralisation. Mr Huntley qualifies as a Competent Person as defined in the Australian Code for Reporting of Identified Mineral Resources and Ore Reserves (JORC) Code 2012. Mr Huntley is an employee of Groundworks Pty Ltd contracted as a consultant to Mayur Resources and consents to the use of the matters based on his information in the form and context in which it appears. As a competent person Mr Huntley takes responsibility for the form and context in which this initial Ore Reserves Estimate prepared for the Central Cement and Lime Project appears.

#### **Forward Looking Statement and Important Information**

This announcement includes "forward looking statements" within the meaning of securities laws of applicable jurisdictions. Forward looking statements can generally be identified by the use of the words "anticipate", "believe", "expect", "project", "forecast", "estimate", "likely", "intend", "should", "could", "may", "target", "plan" "guidance" and other similar expressions. Indications of, and guidance on, future earning or dividends and financial position and performance are also forward-looking statements. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Mayur and its officers, employees, agents or associates, that may cause actual results to differ materially from those expressed or implied in such statement. Actual results, performance or achievements may vary materially from any projections and forward-looking statements and the assumptions on which those statements are based. Readers are cautioned not to place undue reliance on forward looking statements and Mayur assumes no obligation to update such information.

#### **Non-IFRS Measures**

The Company supplements its financial information reporting determined under International Financial Reporting Standards (IFRS) with certain non-IFRS financial measures, including cash operating costs, All-In Sustaining Cost, EBITDA, NPV, IRR and project payback. The Company believes that these measures provide additional meaningful information to assist management, investors and analysts in understanding the financial results and assessing our prospects for future performance.



#### ANNEX A - EAST LEA LEA CORRECTIVE AREA DRILL HOLES

The following table shows the details, and assay results, of the 4 holes (LDH013, 14, 15, 16) drilled at the East Lea Correctives Area used as the basis for the maiden Mineral Resource estimate. (Please note results from LDH016 are pending)

DrillHole	Easting	Northing	Elevation	Declination	Azimuth	Hole Depth
LDH013	502,404	8,977,584	35	-90	0	29.6
LDH014	502,390	8,976,816	38	-90	0	42.3
LDH015	503,094	8,977,531	55	-90	0	42.3
LDH016	503,001	8,977,056	78	-90	0	50

DrillHole	From	То	Al <sub>2</sub> O <sub>3</sub>	CaO	Fe <sub>2</sub> O <sub>3</sub>	K₂O	MgO	Na₂O	SiO <sub>2</sub>
LDH013	0	1.1	13.45	4.83	9.13	1.76	2.57	1.61	57.53
LDH013	1.1	1.7	4.04	0.08	3.92	0.08	0.08	0.08	88.39
LDH013	1.7	3	10.38	0.12	8.1	0.1	0.3	0.1	74.12
LDH013	3	4	7.55	0.19	4.43	0.14	0.66	0.13	81.49
LDH013	4	5	4.94	0.13	3.19	0.15	0.38	0.12	87.09
LDH013	5	6.2	8.57	0.3	5.01	0.2	0.91	0.15	78.96
LDH013	6.2	7	9.08	0.28	4.96	0.21	0.81	0.13	78.82
LDH013	7	7.9	9.48	0.36	5.4	0.3	1.06	0.13	76.89
LDH013	7.9	8.9	10.19	0.39	5.5	0.33	1.18	0.14	75.61
LDH013	8.9	10	6.36	0.22	4.22	0.24	0.67	0.13	83.17
LDH013	10	12	2.69	0.1	2.27	0.13	0.22	0.11	91.8
LDH013	12	13.6	9.9	0.82	6.03	0.84	2.15	0.36	72.63
LDH013	13.6	15.1	12.68	1.25	5.64	0.96	3.21	0.35	67.14
LDH013	15.1	16.6	12.81	1.35	6.15	1.04	3.24	0.35	66.99
LDH013	16.6	18.1	11.98	1.05	6.34	0.93	2.51	0.35	69.2
LDH013	18.1	19.8	11.87	2.84	5.76	0.85	2.46	0.42	66.98
LDH013	19.8	21.2	11.09	6.06	5.29	0.81	2.23	0.5	63.3
LDH013	21.2	22.4	9.67	12.46	5.47	0.89	2.2	0.2	53.38
LDH013	22.4	23.5	9.92	9.13	5.36	0.82	2.28	0.19	59.31
LDH013	23.5	25.1	10.31	3.49	5.48	0.69	2.32	0.26	67.98
LDH013	25.1	26.3	9.75	1.08	5.69	0.8	2.01	0.27	73.39
LDH013	26.3	28.9	2.67	0.3	2.89	0.28	0.51	0.13	90.29
LDH013	28.9	29.6	3.28	0.36	2.9	0.34	0.58	0.15	88.75
LDH014	0	2.9	10.34	0.10	7.94	0.10	0.20	0.07	74.06
LDH014	2.9	4	10.77	0.27	4.78	0.16	0.80	0.14	76.31
LDH014	4	5.8	10.61	0.35	4.46	0.25	1.09	0.15	76.11
LDH014	5.8	6.6	15.18	0.44	6.38	0.45	1.39	0.15	67.30
LDH014	6.6	7.8	18.25	0.67	7.12	0.25	2.05	0.17	59.85
LDH014	7.8	9	23.08	0.70	9.40	0.28	2.57	0.15	50.84
LDH014	9	10.8	21.16	0.84	8.40	0.73	3.23	0.31	53.60



DrillHole	From	То	Al <sub>2</sub> O <sub>3</sub>	CaO	Fe <sub>2</sub> O <sub>3</sub>	K₂O	MgO	Na₂O	SiO <sub>2</sub>
LDH014	10.8	12.3	20.73	0.88	9.97	1.55	2.78	0.63	52.81
LDH014	12.3	13.8	19.12	1.43	9.00	1.86	3.05	1.14	54.24
LDH014	13.8	14.7	18.60	1.62	7.67	1.81	3.51	1.06	55.21
LDH014	14.7	15.7	18.32	1.97	7.99	1.91	3.64	1.18	55.93
LDH014	15.7	16.4	18.33	2.30	8.04	2.01	3.43	1.39	55.93
LDH014	16.4	16.9	17.27	1.97	8.51	1.65	3.81	0.77	55.73
LDH014	16.9	18.1	17.73	2.38	10.31	1.79	3.44	1.19	54.12
LDH014	18.1	19.7	16.85	2.99	11.80	1.96	2.91	1.89	53.07
LDH014	19.7	20.8	17.22	3.19	9.59	1.97	3.11	1.83	55.25
LDH014	20.8	22.3	17.60	4.72	7.66	2.47	3.13	2.23	55.11
LDH014	22.3	23.3	18.41	2.89	7.27	1.95	3.45	1.28	55.65
LDH014	23.3	24.2	17.25	2.43	8.95	1.94	3.30	1.10	55.67
LDH014	24.2	25.8	16.70	3.49	9.72	1.71	3.37	0.97	54.01
LDH014	25.8	26.8	16.68	3.73	7.43	2.01	3.50	1.16	55.45
LDH014	26.8	27.8	16.85	3.35	7.15	1.99	3.54	1.26	55.99
LDH014	27.8	28.8	17.21	2.71	6.46	2.15	3.76	1.15	57.01
LDH014	28.8	30.4	16.35	7.24	7.88	1.73	3.27	1.25	50.13
LDH014	30.4	31.3	14.83	11.29	7.69	1.46	3.13	0.89	45.55
LDH014	31.3	32.2	15.89	4.63	8.32	2.05	3.37	0.98	52.85
LDH014	32.2	33.4	19.23	2.24	8.10	2.20	2.70	1.25	54.69
LDH014	33.4	34.8	18.57	2.22	9.03	2.00	3.05	1.29	54.33
LDH014	34.8	36.4	17.58	2.80	8.23	1.93	3.44	1.16	55.34
LDH014	36.4	37.3	17.26	2.23	8.44	1.90	3.03	1.17	56.62
LDH014	37.3	38.8	16.20	2.89	6.79	1.89	3.49	1.02	57.75
LDH014	38.8	39.8	15.15	2.49	6.48	1.67	3.62	0.91	59.85
LDH014	39.8	41	10.92	1.70	5.62	1.30	2.34	0.55	70.32
LDH014	41	42.3	12.21	2.36	6.35	1.36	2.62	0.54	66.11
LDH015	0	1.2	15.29	0.03	10.19	0.07	0.12	0.06	65.77
LDH015	1.2	2.3	20.08	0.22	9.75	0.09	0.19	0.09	58.88
LDH015	2.3	3.3	19.20	0.04	8.14	0.16	1.18	0.18	61.29
LDH015	3.3	4.3	19.70	0.09	9.54	0.18	1.33	0.20	58.72
LDH015	4.3	5.3	21.30	0.16	9.08	0.25	1.81	0.23	55.96
LDH015	5.3	6.4	22.47	0.22	7.63	0.29	2.09	0.23	55.51
LDH015	6.4	7.5	20.73	0.29	10.57	0.34	2.28	0.23	53.96
LDH015	7.5	8.2	22.46	0.30	7.13	0.31	1.98	0.22	55.81
LDH015	8.2	9.3	20.64	0.37	8.90	0.30	2.19	0.22	55.98
LDH015	9.3	10.1	19.93	0.42	8.43	0.30	2.17	0.23	57.49
LDH015	10.1	10.8	17.19	0.48	7.33	0.32	2.40	0.23	62.36
LDH015	10.8	12	13.30	0.50	6.58	0.53	2.49	0.28	68.30
LDH015	12	13.8	11.79	0.50	6.30	0.66	2.18	0.48	70.54
LDH015	13.8	14.9	12.09	3.79	5.88	0.38	1.70	0.43	65.73
LDH015	14.9	15.6	12.22	5.09	6.10	0.35	1.32	0.34	63.94
LDH015	15.6	16.8	14.91	5.36	7.41	0.35	1.12	0.28	58.48
LDH015	16.8	17.8	17.51	1.51	8.70	0.43	1.56	0.26	59.90



DrillHole	From	То	Al <sub>2</sub> O <sub>3</sub>	CaO	Fe₂O₃	K₂O	MgO	Na₂O	SiO <sub>2</sub>
LDH015	17.8	18.8	16.83	0.40	8.10	0.49	1.03	0.25	64.04
LDH015	18.8	19.8	15.09	1.78	7.41	0.48	1.10	0.30	64.62
LDH015	19.8	20.8	15.79	0.39	7.64	0.56	1.10	0.34	66.11
LDH015	20.8	21.8	16.63	0.39	7.97	0.62	1.10	0.36	64.64
LDH015	21.8	22.8	17.02	0.39	8.34	0.63	1.09	0.36	63.69
LDH015	22.8	23.8	9.33	0.43	5.17	0.58	0.83	0.76	77.87
LDH015	23.8	24.8	11.09	0.89	6.13	0.59	1.07	1.11	73.54
LDH015	24.8	25.8	12.05	1.33	6.21	0.71	1.50	1.81	70.56
LDH015	25.8	26.8	11.87	1.06	6.08	0.78	1.42	1.88	71.18
LDH015	26.8	27.8	11.37	0.46	5.70	0.87	1.20	1.69	73.46
LDH015	27.8	28.8	11.22	0.30	5.57	0.84	1.06	1.30	74.87
LDH015	28.8	29.8	11.48	0.26	5.70	0.84	1.01	0.85	74.62
LDH015	29.8	30.8	11.71	0.25	6.91	0.88	0.96	0.81	72.36
LDH015	30.8	31.8	11.64	0.24	7.87	0.80	0.98	0.60	71.39
LDH015	31.8	32.8	12.40	0.27	7.11	0.80	1.03	0.56	71.40
LDH015	32.8	33.8	13.77	0.33	6.80	0.96	1.22	0.73	69.49
LDH015	33.8	34.8	14.18	0.36	7.53	0.94	1.30	0.81	68.00
LDH015	34.8	35.8	13.36	0.36	6.95	0.78	1.14	1.01	69.74
LDH015	35.8	36.8	13.56	0.37	7.49	0.93	1.27	1.04	68.36
LDH015	36.8	37.8	12.58	0.31	6.14	0.88	1.08	1.21	71.92
LDH015	37.8	38.8	12.14	0.34	6.01	0.91	1.08	1.24	72.39
LDH015	38.8	39.8	11.25	0.31	6.17	0.89	0.99	1.24	73.96
LDH015	39.8	40.8	11.14	0.32	5.77	0.89	0.98	1.22	74.62
LDH015	40.8	41.8	12.00	0.38	6.14	1.04	1.10	1.40	72.78

Note – LDH016 results are pending



# **ANNEX B - JORC TABLE 1 (Central Cement and Lime Project)**

# JORC Code, 2012 Edition – Table 1 report (Central Cement and Lime (CCL) Project)

## **Section 1 Sampling Techniques and Data**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg cut channels, random chips, or specific specialized 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>64 Rock chip samples selected on a grid pattern (Kido and Lea Lea) as per 12 January 2018 ASX release (Maiden JORC Resource)</li> <li>Additional 6 Channel samples were completed in the East Lea Lea corrective area within abandoned quarry sites.</li> <li>The core samples were logged by the supervising field geologist and photographed for future reference.</li> <li>All HQ Diamond drill core sampled on lithological boundaries on two metre sample lengths. The drill core was cut using an industry standard diamond core saw.</li> <li>Samples when cut were sampled and bagged up with an independent reference number with half of the core retained for future reference.</li> <li>All samples sent to ALS Laboratory in Brisbane and assayed for CaCO3, Al2O3, CaO, Fe2O3, MgO, MnO, SiO2 and a suite of other elements.</li> <li>Hole numbers were generally designated in incremental order as 'for Kido MRDD or Lea Lea LDH. East Lea Lea correctives drill holes were treated as Lea Lea holes and numbered as such.</li> </ul>
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).	<ul> <li>HQ triple tube core drill was used for resource assessment.</li> <li>Core logging used a supervising Geologist to log the hole, a trained drilling foreman to supervise drilling activities and 3-4 field hands to assist with operating the rig.</li> </ul>
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul> <li>Limestone - HQ half core 2m samples sent to ALS Global for crushing, pulverizing and assay analysis.</li> <li>Correctives - HQ 1 metre samples sent to ALS for crushing, pulverizing and assaying</li> <li>Drilled triple tube to maximize core recovery.</li> <li>In limestone some core loss of finer and infill clay material has occurred. Core recoveries were noted on the drill logs. Further work is required to determine the impacts of core loss on grade although the material if not high grade is likely to be suitable for blending in clinker production.</li> </ul>

Criteria	JORC Code explanation	Commentary
Logging	<ul> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All rock chip samples visually inspected and recorded.</li> <li>All drill core geologically logged.</li> <li>The drill rig had its own Geologist. Each sample was logged by the Geologist supervising that specific rig. Two logging forms were used – one was the 'Sample Run Sheet' and the 'Lithology Log Sheet'. These forms were filled in by hand, and then later photographed and digitised into an Excel spreadsheet. The 'Sample Run Sheet' was recorded with the date, drillhole number, sample number, from and to depths, the hole coordinates, the sample recovery and magnetic susceptibility information. A 'comments' column was also provided.</li> <li>The 'Lithology Log Sheet' was recorded with the Drillhole number, the proposed hole number, the date, the co-ordinates in WGS84, the hole depth, the sampler and the Geologist's name.</li> <li>The columns consisted of the 'from-to' depths, the Lith codes, the colour, weathering, CaCO3 content, and sand size. A 'comments' column was also provided. A logging and sampling protocols procedure booklet was provided to each geologist with assigned logging codes for them to use.</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All samples were collected at either lithological boundaries if shorter than two metres or on 2m intervals.</li> <li>The core was cut in half along an orientation line left half to the lab right side of core remaining for future reference.</li> <li>Representative samples retained.</li> <li>Field duplicate samples were collected roughly every 20 samples. Duplicate samples were split and placed into two separate sample bags after the sample was thoroughly homogenised. The sample was marked as a duplicate sample on the sample run sheet.</li> <li>HQ core is halved and sent to laboratory. Half core retained by Mayur.</li> <li>Insertion of blinds and blanks samples occurred approximately every 20 samples.</li> </ul>

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	<ul> <li>Once dry, the samples were packed into labelled polyweave bags with approximately 10 samples per bag.</li> <li>All samples sent to a suitably qualified Assay Laboratory in Brisbane. Namely ALS, Brisbane. Quality control done by laboratory where they were dried / crushed / split and pulverised.</li> <li>All assays done using the ME-XRF 26 method.</li> <li>Blanks and standards inserted by Mayur. ALS also duplicated samples for assay regularly.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>One twinned hole was drilled.</li> <li>A total of 26 Resource holes were drilled (9 Kido, 13 Lea Lea and 4 at East Lea Lea Correctives Area – 1 of which has assaying results pending) were holes were completed during the field programme, with good correlations. The hand written drillhole logs prepared by the field geologists were input into two Excel files that were proofread by the supervising Geologist for errors in data entry, logic and formatting.</li> </ul>
Location of data points	<ul> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Location of rock chip samples done using Garmin hand held GPS.         Accuracy within 4m²</li> <li>Table of rock sample locations – refer to table 1 of ASX announcement dated 12 January 2018 (Maiden JORC Resource)</li> <li>Drill holes are all vertical. Collar locations are tabulated in ASX announcement dated 12 January 2018 (Maiden JORC Resource)</li> <li>Correctives Area drilling - Hole number, from and to for the drill core samples – refer to accompanying ASX announcement.</li> <li>Drill Collar points have been rectified back to detailed survey data</li> <li>The data has been projected to UTM WGS84 55S.</li> </ul>

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>High level drillhole planning and layout was guided by the extent of surface outcrop and geological and topographic features patterns that showed the limestone unit.</li> <li>The drill pattern was based on holes 200 - 300 metres apart.</li> <li>All holes were situated perpendicular to the orientation of the limestone and where practical at 90 degrees to the dip of the strata.</li> <li>The data density in the majority of areas is sufficient to establish grade and thickness continuity of the mineralised units.</li> <li>Limestone sample compositing has been applied on two metre intervals.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul> <li>No geological interpretation or relationships have been observed which bias the sampling. That said core loss will be further assessed by comparison of the bulk sample results with nearby core assay results</li> <li>Basic flat lying to moderately dipping limestone formation, allowing for majority of vertical holes with several angled holes.</li> <li>The correctives are a sequence of flay lying quaternary gravels and alluvium.</li> </ul>
Sample security	The measures taken to ensure sample security.	<ul> <li>Mayur developed a 'chain of custody' flowsheet prior to the of the commencement of the programme that was strictly adhered to.</li> <li>All drill sample/core trays were supervised for collection and logged onsite.</li> <li>Following this they were repacked into polyweave bags ready for dispatch from site. The Polybags were then transported to Port Moresby with Mayur staff members on board. The samples were then trucked to Port Moresby under the supervision of Mayur staff, either stored temporarily in the Mayur secure compound or taken directly to Mayur's freight forwarder in Port Moresby, where a dispatch inventory was prepared and the samples either airfreighted by pallet or sea freighted by container to Port of Brisbane.</li> <li>The company's Australian freight logistics representative then cleared the samples through customs and quarantine and transported them to the ALS Laboratory in Brisbane.</li> </ul>
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	Field checks have been completed and the data has been audited

## **Section 2 Reporting of Exploration Results**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>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.</li> <li>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.</li> </ul>	<ul> <li>The tenement (EL2303) comprising the Central Cement and Lime (formerly known as the Port Moresby Limestone Project) is 100% owned by Mayur Iron PNG Ltd, a 100% owned subsidiary of Mayur Resources Limited.</li> <li>EL2303 has been renewed for another 2-year term (per the PNG Mining Act) and will expire on 13 May 2020</li> </ul>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	None known at this stage.
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>Early Tertiary Limestone deposit.</li> <li>Partially recrystallized.</li> <li>Flat lying to gently dipping massive homogeneous limestone.</li> <li>Slightly weathered and unaltered.</li> <li>The correctives are a sequence of flay lying quaternary gravels and alluvium.</li> </ul>
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	<ul> <li>All rock chip samples taken at surface with coordinates and RL recorded.</li> <li>All Kido and Lea Lea drill hole collar locations including easting, northing and RL are recorded in the ASX announcement dated 12 January 2018 (Maiden JORC Resource).</li> <li>Correctives Area drill hole collar locations including easting, northing and RL are recorded in the accompanying ASX announcement.</li> <li>All drill core samples record the from and to distance from the collar location down hole.</li> </ul>

Criteria	JORC Code explanation	Commentary
Data aggregation methods	<ul> <li>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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul> <li>Refer to Section 3 for cut off grades</li> <li>Weighted average i.e. length x grade samples used for initial assessment.</li> <li>Inverse Distance weighted (power 3) used for resource estimation purposes.</li> <li>Sample compositing completed on two metre intervals.</li> <li>No high grade or low grade cut values applied as all high grade and low-grade values are considered real and reflect localized changes in sedimentation.</li> <li>No metal equivalents being reported.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>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').</li> </ul>	<ul> <li>Rock chip samples collected over a gridded pattern.</li> <li>Limestone drill holes on each prospect are spaced on nominal 250m centres.</li> <li>The mineralisation is flat lying to modestly dipping shallow dipping thus downhole widths are considered as the 'true thickness'</li> </ul>
Diagrams	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	See location maps in ASX announcement dated 12 January 2018 (Maiden JORC) and also in the accompanying ASX announcement (CCL DFS).
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	Location and assay results only reported.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>A detailed 3D drone topographic survey was completed across the entire project site at Kido, Lea Lea and East Lea Lea (Correctives Area)</li> <li>4 bulk samples (2 pits at Lea Lea and 2 at Kido) have been completed</li> <li>Detailed mapping and assessment of the East lea Lea correctives area</li> <li>6 channel samples were taken across the East lea Lea correctives area</li> <li>4 HQ core holes were completed at the East lea Lea correctives area for a total of 162.2 metres. All holes were drilled vertically</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Further works in the Corrective Area will involve size grading and comminution studies and use of trial mining and costeaning to further interrogate grade continuity and mining parameters.

# **Section 3 Estimation and Reporting of Mineral Resources**

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>Data collated by Mayur from digital hardcopy reports and appendices</li> <li>Digital geological logging information was compiled by Groundwork from hard copy logs for all available holes and core photographs</li> <li>Checks completed by Groundwork include:         <ul> <li>Data was imported into an Access database with indexed fields, including checks for duplicate entries, sample overlap, unusual assay values and missing data.</li> <li>Additional error checking using the Surpac database audit option for incorrect hole depth, sample/logging overlaps and missing downhole surveys.</li> <li>Manual checking of logging codes for consistency, plausibility of drill hole trajectories and assay grades.</li> <li>Assessment of the data confirms that it is suitable for resource estimation.</li> </ul> </li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	Groundwork Plus visited the site in mid-2018 for several days and completed reconnaissance investigation works.
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul> <li>A simple geological model exists being two large deposits (namely Kido and Lea Lea) of geologically consistent and relatively homogenous grade biomicritic limestone. These are large topographic features.</li> <li>Geological modelling has used Surpac 3D software to generate solids and surfaces from 200m space cross sections which have then been incorporated in to a block model.</li> <li>Drilling suggests the limestone is laterally open in horizontal directions and at depth. Some drillholes have terminated in limestone.</li> <li>Geological understanding is high and appropriate for resource estimation</li> <li>Alternative interpretations are possible but not considered likely due to the straight forward nature of the limestone. Any alternative is unlikely to affect the estimates.</li> <li>The style of mineralisation and the orebody type means sedimentation processes along with structural deformation and later groundwater movements control calcium grades.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>There is an obvious structural control to mineralisation being bedding and larger scale sedimentary controls.</li> <li>The corrective resource area is a sequence of quaternary gravels which area poorly sorted and contain a variety of gravels sourced from a large provenance. These gravels occur as sheet flow across the low lands of this part of New Guinea and form an extensive area of low lying ridgelines. Strike length is greater than 15 kilometers while demonstrated gravel bed width is a minimum of 400 metres</li> </ul>
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	<ul> <li>The resources at a cut-off of 48% CaO form two consistent limestone deposits, both with a strike length of over 1000m in an NW-SE orientation. Limestone occurs at surface and continues to at least -20 RL in the Kido area.</li> <li>The gravels occur as sheet flow across the low lands of this part of Papua New Guinea and form an extensive area of low lying ridgelines. Strike length is greater than 15 kilometers while total gravel bed width is unknown however has been demonstrated to be at least 400 metres wide.</li> </ul>
Estimation and modelling techniques	<ul> <li>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.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> </ul>	<ul> <li>The limestone block grade was estimated using inverse Distance Weighting (power3) using Surpac software. Groundwork considers inverse Distance Weighting (power3) to be an appropriate estimation technique for this type of mineralisation. The corrective block grade was estimated) using Surpac software. Groundwork considers inverse Distance Weighting (power2) to be an appropriate estimation technique for this type of mineralisation.</li> <li>The base of the limestone at Lea Lea deposit was treated as a hard boundary during estimation</li> <li>The relatively modest Coefficient of Variation for CaO and absence of extreme values precluded the need for top-cutting.</li> <li>A total of 806 samples were used to estimate the limestone resource area (as reported in 12 January 2018 ASX announcement).</li> <li>No assumptions were made regarding the recovery of by-products,</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul> <li>although it is considered likely that the bulk of the by products will be used as either raw feed for clinker or as quarry products.</li> <li>Variography was performed for the limestone. Grade continuity was high for the directional variograms in the limestone.</li> <li>Limestone drill holes are on an irregular grid with a nominal spacing of 250 x 250m.</li> <li>Composites have been taken using 2 metre intervals.</li> <li>Block dimensions are 50x50x10m (E, N, RL respectively) for parent block sizes and 25x 25 x10 for grade resolution. The block dimensions were chosen as they are representative of grade continuity, which is homogenous and were as large as could be practically achieved.</li> <li>The vertical dimension was shortened to reflect downhole data spacing</li> <li>The initial search ellipse (isotropic) was 200m increasing to 600m for the second pass and 1200m for the third. The minimum number of composites used was 3 with a maximum of 25. The maximum number of composites per drill hole was set to 8 to ensure at least 3 drill holes were used for the resource estimate.</li> <li>The maximum extrapolation of the estimates is 300m.</li> <li>The estimation procedure was reviewed as part of an internal Groundwork peer review. Inverse Distance Squared check models were produced by Groundwork. The tonnage, grade and classification of the check estimates agreed well with the primary resource estimate.</li> <li>No deleterious elements or acid mine drainage has been factored in the resource estimate as none are known.</li> <li>The final block model was reviewed visually, and it was concluded that the block model fairly represents the grades observed in the drill holes. Groundwork also validated the block model statistically using a variety of histograms, boxplots, swathe plots and summary statistics.</li> <li>No production has taken place, so no reconciliation data is available.</li> </ul>
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on based on apparent particle densities pursuant to Australian Standard which considers both the wet and dry weight of the material.

Criteria	JORC Code explanation	Commentary						
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	<ul> <li>The quarried (mined) material will be used for the downstream production of clinker/cement and quicklime associated with the CCL project, with different respective cut off values as follows:         <ul> <li>Cut off Grades for Lime are 52% CaO</li> <li>Blend Grades for Cement and Clinker are:</li> </ul> </li> </ul>						
		CaO         SiO2         Al2O3         Fe2O3         MgO         K2O         Na2O         SO3           42.7         14.3         3.5         2.2         0.5         0.1         0.1         0.01						
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	<ul> <li>Groundworks understanding of a bulk mining scenario is based on information supplied by Mayur and considers typical industry standards.</li> <li>Mining will be completed by conventional bulk drill and blast extraction using ANFO or equivalent explosives.</li> <li>The sub block model block size (25x25x10m) is the effective minimum mining dimension for this estimate.</li> <li>No internal dilution has been factored into the modelling due to resource homogeneity.</li> </ul>						
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	<ul> <li>Metallurgical test work for quicklime production including kiln suitability and decrepitation testing by Sibelco, and geochemical sampling by ALS Global has been completed. These results demonstrate material suitability.</li> <li>No penalty elements have been identified in the testing so far however silica levels will require detailed grade control management to allow for effective incorporation into the kiln feed for clinker and quicklime. The silica is likely to be of benefit for clinker production, and the production of quarry materials.</li> <li>Bulk samples have been taken for crushing and materials assessment to determine kiln and other product yields along with general material suitability.</li> <li>For the corrective area the material will undergo additional crushing screening and comminution trails if needed however at this point the material can be blended to the limestone without modification.</li> </ul>						

Criteria	JORC Code explanation	Commentary
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a Greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	<ul> <li>The area lies adjacent to the coastline and accordingly hydraulic issues along with coastal geomorphology and other potential coast line impacts will need to be considered.</li> <li>Waste materials will be in so far as is practical used and sold as construction materials. Material surplus to this will be placed in overburden storage dumps or used for progressive rehabilitation of the site. The limestone while having a natural alkalinity does not contain sulfides or other minerals which are likely to impact deleteriously upon the local environment provided industry standard control measures are used.</li> <li>The area is covered with sparse vegetation typical of this part of PNG.</li> <li>No significant environmental sites of importance have yet been recognized.</li> <li>Detailed environmental works will be commenced to further assess the potential impacts of the area from mining.</li> </ul>
Bulk density	<ul> <li>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.</li> <li>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.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>Density of the limestone has been measured at 2.7 t/m³ and is consistent with limestone values from around the world. Apparent Particle Densities have been used pursuant to the relevant Australian standard.</li> <li>Density values for soil and clay used are 1.8 t/m³.</li> <li>Density values for marl and siltstone used are 2.6 t/m³.</li> <li>Density values for limestone used are 2.7 t/m³. Further density measurements are required on the various categories of more weathered material.</li> </ul>
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>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).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>The deposit consists of Measured, Indicated and Inferred Resources. The classification is based on the grade continuity exhibited in the variography and the search passes used in the grade interpolation subject to assessment of other impacting factors such as core handling and sampling procedures, QAQC outcomes, density measurements along with the geological model.</li> <li>Search Pass 1 is used to classify Measured Resources in the area of the drilling over the main areas of clear and discernable limestone outcrop. Pass 2, is classed as Indicated and Pass 3 and 4 as an Inferred Mineral</li> </ul>

Criteria	JORC Code explanation	Commentary
		Resources.  • The classification appropriately reflects the Competent Person's view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	Only an internal audit has been completed.
Discussion of relative accuracy/ confidence	<ul> <li>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.</li> <li>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.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul> <li>The relative accuracy and confidence level in the Mineral Resource estimates is considered to be in line with the generally accepted accuracy and confidence of the nominated Mineral Resource categories for this type of material. This has been determined on a qualitative, rather than quantitative, basis, and is based on the Competent Person's experience with similar deposits.</li> <li>The geological nature of the deposit, composite/block grade comparison and the coefficient of variation for CaO lend themselves to a reasonable level of confidence in the resource estimates.</li> <li>The Mineral Resource estimates are considered to be accurate globally, but there is some uncertainty in the local estimates due to the current drillhole spacing and a more detailed lack of geological definition.</li> <li>No mining of the deposit has taken place and resultantly no production data is available for comparison.</li> </ul>

## **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.)

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.	The Ore Reserve Estimate is based on the Mineral Resource released on 12     January 2018, by Mayur Resources, competent person: Mr Rod Huntley     (Consultant with Groundwork Plus Pty Ltd)
	• Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	The Ore Reserves are reported inclusive of the Mineral Resources.
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits</li> <li>If no site visits have been undertaken indicate why this is the case</li> </ul>	Site Visits were conducted, by the Competent Person (Mr Rod Huntley) in order to validate Ore Reserves inputs assumptions and other relevant factors.
Study status	The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.	The Ore Reserve is an input to the January 2019 CCL Project Definitive Feasibility Study (DFS). The DFS team consists of Mayur, Siecap Pty Ltd and independent external consultants including Groundwork, THAA, RD Engineering, Coffey, PRDW.
	The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	As part of the Feasibility study, a mine plan and schedule was developed by Groundwork based on the Measured & Indicated Resources released as part of the Mineral Resource on the 12 January 2018. This mine plan considered material Modifying Factors such as mining, processing, metallurgy, infrastructure, economic, marketing, legal, environmental, social and regulatory and is considered technically achievable and economically viable. The mine plan involves the application of conventional open cut quarrying methods that are widely used in the quarrying industry.

Criteria	JORC Code explanation	Commentary								
Cut-off parameters	The basis of the cut-off grade(s) or quality parameters applied.	projection	ject, give racted a ver CaO uired ble lime and ough lo ow this.	en the lime nd then use grade mate end mix, pr d quick lime wer grade	stone and ed in the operials can ovided the e product agricultur	d associat cement and be blende e overall s a grade al lime pr	ed quarri nd clinker ed as need blend mix of 52% Ca oducts ca	de per-se for ed material manufactuded to achieve aO has been no be produ	l is bulk uring proc eve the d. n used iced at va	lues
		42.7	14.3	3.5	2.2	0.5	0.1	0.1	0.01	

		<ul> <li>A base quarrying (mining) cost of \$USD 2.20 per tonne of raw feed material exclusive of haulage.</li> </ul>
		<ul> <li>Owner operator cost model used for estimation of quarry (mine) operating costs.</li> </ul>
		<ul> <li>330 days quarry production per annum using two nine-hour shifts.</li> </ul>
	•	<ul> <li>Extraction via conventional drill / blast and loading via excavator direct to haul trucks from the Kido deposit being the main source of material for the cement / lime plant in the first 30 years of the project.</li> </ul>
		<ul> <li>Bench heights are 15 meters with a design batter angle used of 70 degrees for terminal benches while operational batters will vary between 70 and 85 degrees as needed.</li> </ul>
		<ul> <li>A front-end loader will blend from the ROM as needed.</li> </ul>
		<ul> <li>Road train delivery of materials from the nearby Lea Lea deposit and the East Lea Lea silica corrective area until the silica corrective materials at Kido are further assessed.</li> </ul>
		<ul> <li>Upgrade / new construction of approximately 23 km of access roads (both internal and external) built to the local standard which is approximately 7 metres wide and suitable for a dual carriage access/egress. The current road, where constructed, is approximately 2.5 to 3 meters wide and will be upgraded as needed. Material to be sourced from the nearby limestone resource areas as to provide sub grade, sub base and base and wearing course materials as needed.</li> </ul>
		<ul> <li>Material hauled by truck will be delivered to an 80-tonne feed bin which links directly to a dual rotor hammer 800 tonnes per hour primary crushing system. Direct dumping into the feed bin will occur for the bulk of tonnes delivered to the crusher while both high grade and low-grade corrective material will be placed on the adjacent ROM</li> </ul>
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Design and scheduling has been completed to achieve the required cement and

(primary source of limestone material), Lea Lea and corrective material

lime raw blend quality. When completing these pit designs the following

• A mining rate of 3.1 million tonnes per annum from 3 pits (Kido

assumptions have been considered.

from East Lea Lea)

• 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).

Mining factors or

assumptions

Criteria	JORC Code explanation	Commentary
		pad for controlling blend grades via front end loader direct feed as needed.
		<ul> <li>Raw material feed grade will be controlled by gamma-metric cross belt analysers which provide real time chemical data on the raw feed grade of the material.</li> </ul>
		<ul> <li>The criteria, or chemistry of the raw feed required for the production of lime and documents are provided above while the specifications used for classification of the lime and lime products, clinker and cement are:</li> </ul>
		<ul> <li>Australian Standard 1672.1-1997 Limes and Limestones Part 1: Limes for Building.</li> </ul>
		<ul> <li>AS3972-2010 General Purpose and Blended Cements.</li> </ul>
		<ul> <li>Australian Technical Infrastructure Committee (ATIC) SP 43</li> <li>Cementitious Material for Concrete.</li> </ul>
		o ASTM C150/C150M.
	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.	<ul> <li>The proposed quarrying (mining) method is an open cut conventional, multi benching scenario of two large topographic features.</li> <li>Mining envisages multiple benches being open at any one time to provide raw feed materials as needed. Benches will be open at Kido, Lea Lea and in other corrective area (East Lea Lea) as needed.</li> <li>Pre strip and development works involve removal of a very thin residual soil profile approximately 100mm thick to expose the raw feed material which is suitable for use immediately below this soil profile.</li> <li>Access roads will be established to all mining areas linking the ROM at Kido, Lea Lea and the correctives area (East Lea Lea). This pavement will be 7 m wide, for the road trains used to haul from Lea Lea and the correctives area and 15 m for the articulated heavy trucks at Kido.</li> <li>Appropriate cost allowances for the above items have been included in the DFS</li> </ul>

Criteria	JORC Code explanation	Commentary
	The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.	<ul> <li>Extraction will be via conventional drill and blast and loading.</li> <li>Proposed bench heights are 15 meters with a design batter angle used of 70 degrees for terminal benches. Operational batters will vary between 70 and 85 degrees as needed.</li> <li>Importantly geotechnical issues while operational will be important however for both areas the entire hills will be removed so only a few terminal or final benches are envisaged at depth at this point in time.</li> <li>Resultantly geotechnical issues are not considered to be significant issues as mining will involve top down extraction of the hills in totality.</li> <li>Grade control will be controlled via cross belt or gamma-metric analyser.</li> <li>Additional confirmatory pre-production drilling will be completed in the initial areas to ensure that grader are as expected.</li> </ul>

• The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).

The Mineral Resource model was released on the 12 of January 2018. The major assumptions in the resource estimate are:

- That the material as drilled, tested and otherwise assessed is representative of actual site conditions chemistry and geology.
- 22 core holes (9 at Kido;13 at Lea Lea), totaling 1592.5 metres of HQ to NQ size core were drilled, with 806 multi element assays taken from the core which have subsequently been used in the resource estimate.
- 4 core holes totaling 162.2 metres HQ core were completed into the Indicated Resource for the corrective materials with 87 multi element assays taken from the core which have subsequently been used in the resource estimate. Results of hole LDH016 remain to be added to the resource and this will be done so when returned.
- The additional rock chip data while very useful in confirming geological and geochemical homogeneity, and consistency in tenors of grade, was not incorporated into the resource estimate. The sampling length used varies between approximately 0.4 and 2 metres, with sample intervals based on geological boundaries, and having been composited as required. Drill spacings across the project area are nominally located on two hundred and fifty metre centres. Field XRF testing was completed on the core, and while not used in the resource estimate, correlates well with the laboratory analysis. Further assessment on the use of field XRF analysis will be completed, and if demonstrated to be suitably accurate and applicable, may be used as part of the future grade control and resource estimation methodology.
- Groundwork constructed a topographic surface from a detailed drone survey in December 2018, which was rectified using permanent station markers and completed by a registered surveyor. The contour data has a measured GPS accuracy of +/-50mm.
- Given the homogeneity and relative consistency of the resource, Inverse
  Distance Weighting (power of 3) was used to interpolate block grades for
  Calcium Oxide, Silica Oxide and Alumina with a block size 25m by 25m by

10m (X, Y & Z) with sub-blocking for grade resolution. The block model was constructed with a parent block size 50m by 50m by 10m (X, Y & Z) with sub-blocking used for volume and grade resolution. Grades were interpolated by Inverse Distance Weighting method, (power of 3), using a three-pass search strategy. The initial search ellipse (isotropic) was 200m increasing to 600m for the second pass and 1200m for the third. The minimum number of composites used was 3 with a maximum of 25. The maximum number of composites per drill hole was set to 8 to ensure at least 3 drill holes were used for the resource estimate.

- Relevant tables from the Mineral Resource Report are provided below.
- Note the reserves have been drawn from the January 2018 Measured Resources and need to be subtracted from the below tables

Table 1 Measured Mineral Resource Estimate\*

Area	Category	CaO cut off %**	Tonnes	CaO %	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub> %
Lea Lea	Measured	52%	61,000,000	53.4	0.60	1.65
Kido	Measured	52%	144,000,000	53.6	0.62	1.77
Total	Measured	52%	205,000,000*	53.5	0.61	1.73

Table 2 Indicated Mineral Resource Estimate\*

Area	Category	CaO cut off %	Tonnes	CaO	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>
Lea Lea	Indicated	50%	117,000,000	51.8	0.9	2.7
Kido	Indicated	50%	11,000,000	51.5	0.6	1.1
Total	Indicated	50%	128,000,000	51.8	0.9	2.6

<sup>\*</sup>Minor rounding errors apply pursuant to JORC 2012.

Table 3 Inferred Mineral Resource Estimate\*

Area	Category	CaO cut off %	Tonnes	CaO	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>
Lea Lea	Inferred	48%	7,000,000	48.1	1.1	2.5
Kido	Inferred	48%	42,000,000	48.4	1.0	1.8
Total	Inferred	48%	49,000,000	48.3	1.0	1.9

Criteria	JORC Code explanation	Commentary
	The mining dilution factors used.	<ul> <li>Mining dilution factors of 5% have been used, however this is a more a function of the loss material that occurs during production (i.e. for generating road bases, environmental rock, dust and oversize etc) rather than for dilution per-se as all materials within the model and reserves area can be used.</li> </ul>
	The mining recovery factors used.	Mining recovery factors of 95% with 5% loss of product as per the above.
	Any minimum mining widths used.	No minimum width has been used the thickness of the limestone hills is > 100 metres while the length is > 1500 metres.
	The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.	No Inferred Resources are used.
	The infrastructure requirements of the selected mining methods.	The infrastructure requirements of the mining method will be shared with the clinker/cement and quicklime plant and main infrastructure area. A workshop hard stand wash down and along with office and ablution facilities will be available in the plant and infrastructure area. An explosives depot occurs 20 kilometres to the east of site and explosives will be brought to site as needed.
Metallurgical factors or assumptions	The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.	The CCL project targets production of lime and cementitious products via proven standard manufacturing process that is common to a global industry which produces more than 3.3 billion tonnes per annum. Cement is the second most consumed product by volume on the planet after water, with China being the largest producer of cement in the world
	Whether the metallurgical process is well-tested technology or novel in nature.	The manufacturing process flow path is relatively simple and very well understood with modern cement / clinker and quicklime plants looking to increase operational efficiency via reuse of heat, water and lower power requirements.

Criteria	JORC Code explanation	Commentary
	The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.	Several programs of test work have been completed on the material to assess the suitability to produce lime and lime products, cement and clinker and quarry products. All testing completed to date confirms material suitability to produce the above products.
	Any assumptions or allowances made for deleterious elements.	<ul> <li>Detailed geochemical testing has been completed on the drill core and testing. This testing has identified the deleterious elements in small amounts occurring not within the main limestone resource but in the Marl and corrective areas.</li> <li>Raw material blending will be needed to achieve the relevant end product specifications. Based on this data these levels of alkali can be managed appropriately. The main elements requiring consideration for blending grades are Sodium, Potassium and Magnesium.</li> </ul>
	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.	Small bulk samples have been taken from test pits for lime decrepitation slaking and water absorption testing which show conformance with relevant specifications. These samples were taken across the two main Resource areas at random locations and are considered representative of the limestone. Quarry products testing was completed on drill core which denotes compliance with relevant Australian Standards testing while.
	For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	<ul> <li>The ore reserve estimation been based on the following standard specifications:</li> <li>Australian Standard 1672.1-1997 Limes and Limestones Part 1: Limes for Building.</li> <li>AS3972-2010 General Purpose and Blended Cements.</li> <li>Australian Technical Infrastructure Committee (ATIC) SP 43 Cementitious Material for Concrete.</li> <li>ASTM C150/C150M.</li> </ul>

Criteria	JORC Code explanation	Commentary
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterization 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.	<ul> <li>Mayur has applied for and secured an Environmental Permit for the project from the Conservation and Environmental Protection Authority in PNG. This permit covers the quarrying activities and the manufacture of clinker and quicklime as Level 2B activities prescribed under the PNG Environment Act 2000</li> </ul>
		<ul> <li>Mayur has also compiled an Environmental Management Plan (EMP) for the project and this has been submitted to CEPA. This is an evolving document and will be amended as required as the project advances. The Company is continuing to work with CEPA to refine the EMP environmental to ensure it aligns as the project definition evolves.</li> </ul>
		<ul> <li>The Company has also commissioned Coffey to undertake a groundwater study of the project area to identify the water sources for the project.</li> <li>Furthermore detailed studies will be undertaken to assess the environmental impacts once the final EPC design has been confirmed.</li> </ul>
		The quarry operations will impact local landforms, but impacts will be mitigated by appropriate pit design and also rehabilitation measures.
		Waste rock if and when generated is benign and nonacid generating as the material is limestone and naturally occurs in this area.
		<ul> <li>In contrast to most mining operations all the materials in the Reserve will be used apart from the topsoil which will be used for rehabilitation purposes.</li> </ul>

Criteria	JORC Code explanation	Commentary
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for	The proposed project site is for a greenfield site in a coastal hinterland area hence all key infrastructure will need to be constructed.
	bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	The nearest public road is approximately 11 km from the proposed plant site at Kido, provides access to Port Moresby, located a further 25 km to the south.
		A basis of design and tender documents have been issued via an EPC tender process for the following works packages:
		<ul> <li>Quarrying</li> <li>Clinker and cement plant</li> <li>Quicklime plant</li> <li>Power station (for dedicated use by the project)</li> <li>Wharf and marine facilities (for dedicated use by the project)</li> <li>The DFS has made appropriate allowances for a fully self-sufficient project operation based on the above scope</li> </ul>
Costs	The derivation of, or assumptions made, regarding projected capital costs in the study.	Mining (quarrying) cost are based on tonnage and grade requirements in the mining schedule.
		The capital cost estimates for the downstream manufacturing plant are based on the outputs of tender process undertaken for the engineering, procurement and construction (EPC) of the following work packages:
		<ul> <li>Quarry (enabling works)</li> <li>Clinker and cement plant</li> <li>Quicklime plant</li> <li>Power station</li> <li>Wharf and marine facilities</li> </ul>
		Allowances in the DFS have been made for owner's team costs, contingency and other pre-development activities.
		Refer to accompanying ASX announcement (CCL Project DFS) for further details

Criteria	JORC Code explanation	Commentary
	The methodology used to estimate operating costs.	Mining (quarrying) operating costs include drill/blast, load/haul, and also consider activities for mining team operating costs, management and maintenance, mobile plant maintenance infrastructure, re-handle and, clear and grub, top soil management, and rehabilitation and mine closure criteria.
		Costs are based on first principles cost modelling and have been quantified as far as possible and where practicable supported by quotations.
		<ul> <li>Operating costs for the subsequent downstream processing (i.e. production of clinker/cement plant, quicklime plant, power station and wharf) have been based on the outputs from the EPC tendering process.</li> </ul>
		Refer to accompanying ASX announcement (CCL Project DFS) for further details
	Allowances made for the content of deleterious elements.	Detailed geochemical testing has been completed on the drill core and testing. This testing has identified the deleterious elements in small amounts occurring not within the main limestone resource but in the Marl and corrective areas. This will require blending to achieve the relevant specifications. Based on this data these levels of alkali can be managed appropriately. The main elements requiring consideration for blending grades are Sodium, Potassium and Magnesium.
	The allowances made for royalties payable, both Government and private.	The royalty for standard mining projects in PNG is 2.25% of FOB revenue or Net Smelter Returns.
		<ul> <li>The CCL project comprises a quarrying operation and vertically integrated downstream processing into clinker/cement and quicklime end products, the company has made an allowance of 2.25 % of ex-quarry effective sales price methodology as a royalty equivalent.</li> </ul>
	• charges, penalties for failure to meet specification, etc.	Not applicable given the vertically integrated nature of the project, and end products will be produced to customer specifications.

Criteria	JORC Code explanation	Commentary
	The basis for forecasting or source of treatment and refining	Not applicable given the vertically integrated nature of the project, and end products will be produced to customer specifications.
	Derivation of transportation charges.	International sea freight costs for the shipping of the end products to export customers are based on freight rates from industry sources, shipping indices and independent broker reports
		Other local transport costs (in PNG) are based on Company research and industry sources
	The source of exchange rates used in the study.	A PGK:USD exchange rate of 0.3:1 has been used.
Revenue factors	<ul> <li>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.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	<ul> <li>Clinker, cement and quicklime prices have been sourced from a combination of market reports prepared for Mayur by industry experts and Mayur's in-house intelligence and knowledge of the industry, that includes Mr Kevin Savory, whom has worked in the cement and lime industry for over 17 years in Australia and Asia.</li> <li>Given the commercial sensitivities and the nature of the cement and lime industry, Mayur is not it a position to disclose the forecast sales prices for these products</li> </ul>

Criteria	JORC Code explanation	Commentary
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	<ul> <li>The project will be PNGs first integrated cement and lime project. The end sales products for the Project are clinker, cement and quicklime.</li> <li>Mayur's marketing strategy is based on a mix of domestic sales (PNG) and export sales to international customers. The production volumes and hence plant design sizing has been based on a detailed market assessment.</li> <li>Mayur has conducted various preliminary discussions with customers for clinker, cement and quicklime both in PNG and in Australia (being the target export market) These discussions have also been used for the sizing / scaling of the project</li> <li>The clinker, cement and quicklime products will be produced to end user specifications hence these are products rather than commodities and as such there is no international price index or reference price.</li> <li>Mayur has conducted its own internal analysis and market assessment including pricing and is confident that its volume and pricing assumptions are reasonable.</li> <li>The Company is not able to disclose forecast product sales prices or operating costs due to the commercial in confidence nature of this information and the potential negative competitive impacts if such information is disclosed. The Company has reasonable grounds for the pricing and costing assumptions that underpin the forward-looking revenue statements and further to this has liaised with the ASX to provide comfort over the basis of these assumptions.</li> </ul>

Criteria	JORC Code explanation	Commentary
Economic	<ul> <li>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.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	<ul> <li>Net Present Value (NPV) for the project is positive and is outlined in the associated company ASX announcement, a range has not been provided as it is commercially sensitive.</li> <li>Discount rate of 9% (real, ungeared) has been used in the NPV model</li> <li>Sensitivities conducted indicate the project is most sensitive to fluctuations in revenue and end product pricing variances</li> <li>Refer to accompanying ASX announcement (CCL Project DFS) for further details</li> </ul>
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	<ul> <li>The preferred plant site on the Kido headland is currently used by the local community (Kido village) for low intensity market gardening given the low-quality soils. There will be impact on sensitive receptors from the quarrying operations (Kido and Lea Lea areas) including periodic rock blasting, and also from the construction and operation of the cement and quicklime plant and wharf at Kido.</li> <li>Compensation will be paid for use of and disturbance to land for the plant site and the quarrying activities, however it is not anticipated that any relocation of residents will be required.</li> <li>The Company has been conducting ongoing community awareness during the exploration stage of the project. This has included regular updates to the community and their representatives.</li> <li>A landowner identification study has been undertaken across the project site and surrounding areas. This will form part of the Mining Lease application process and the finalisation of the compensation agreement.</li> <li>The project is sited around 7km from the USD18bn PNG LNG plant (built by Exxon Mobil that has been operating for several years). Hence the local community is aware and appreciative of industrial facilities.</li> </ul>

Criteria	JORC Code explanation	Commentary
Other	To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:	No material marketing contracts are currently in place for the end products, however as mentioned above the Company is in confidential discussions
	Any identified material naturally occurring risks.	with potential customers
	<ul> <li>The status of material legal agreements and marketing arrangements.</li> </ul>	Water supply is an important factor for the project and it is currently assumed that the water requirements will be sourced from local surface
	The status of governmental agreements and approvals critical to	water sources options are still being assessed
	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.	<ul> <li>The project will require a Mining Lease as assessed by the MRA and ultimately issued by the Mining Minister. The feasibility study together with the landownership study form a key part of the ML application.</li> </ul>
		<ul> <li>The CCL project will be PNG's first integrated clinker/cement and quicklime project and accordingly the Company has conducted extensive awareness with government in PNG to support and endorse the development of the project.</li> </ul>
		There are reasonable grounds to expect that all the above mentioned items will be secured within the necessary timeframes for the successful implementation of the project
Classification	The basis for the classification of the Ore Reserves into varying confidence categories.	A Probable Ore Reserve confidence level has been assigned to the limestone resources based on the estimated mine opex costs and other relevant modifying factors but primarily on the integration of the mine into a vertically integrated processing and supply chain for the production of lime and cementitious materials. Like all Reserve estimates small in and on ground variances should be expected however based on the currently available data set, any variance is not considered likely to have any material impact on the operation.

Criteria	JORC Code explanation	Commentary
	Whether the result appropriately reflects the Competent Person's view of the deposit.	• In estimating the Ore Reserves for the project the estimate does reflect the view of the competent person. If any variation is to be expected it is not is regard to the quality or quantity of the Limestone or Marl Reserves but is in regards to the mine operation costs. Importantly because the mining costs of the operation are a proportionally small proportion of the total cost of production modest increase in OPEX cost while not desirable do not have a large impact on project viability.
	The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	100% of the Probable Ore Reserve has been derived from a Measured Mineral Resource. The reasons that the Ore Reserve has not been considered to be a Proven Reserve are based on consideration of the modifying factors and include.
		<ul> <li>A Mining Lease has yet to be granted and while expected to be granted as a matter of course, this lack ack of full tenure is currently a constraint on the operation.</li> <li>PNG is a modest sovereign risk environment.</li> <li>Stakeholder engagement while not expected to be an issue can be problematic in PNG.</li> <li>OPEX costs could increase if the second mooted LNG train commences construction thus potentially placing a cost constraint on the mining portion of the project. That said. should this occur then power prices which are a large component of the total cost of production could decrease.</li> <li>While the technical mining and processing issues are well understood the site is still a greenfield site and full-scale commercial trials have not yet been completed.</li> </ul>
Audits or reviews	The results of any audits or reviews of Ore Reserve estimates.	The data provided by Groundwork Plus has been internally peer reviewed and has also been reviewed by Mayur Resources for technical and commercial accuracy. No external audits have been completed on the Reserve Estimate.

Criteria	JORC Code explanation	Commentary
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.	The relative accuracy and confidence levels on the Ore Reserve estimate is high as the limestone homogeneity is very high and extensive over the planned mining areas. For consideration of quarrying costs and modifying factors assessment the project was benchmarked against the nearby very large quarry operation which provided materials for the PNG LNG pads for costs while the occurrence of a major resource project in the area denotes project viability.
	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.	Regarding mining conventional multi bench extraction is planned while the processing technologies and flow paths are well understood.
	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.	The high confidence level relates to the global Ore Reserve estimate for the project area. Minor and non-material variations will be encountered when mining commences however globally the Ore Reserve estimate is considered accurate and reflective of mining outcomes when the modifying factors are considered. Tonnages estimates for the Ore Reserves are only a modest portion of the total available limestone resource area.
	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.	No production data is available as production has not yet commenced.