

# MUNGLINUP GRAPHITE PROJECT DFS SUMMARY OUTCOMES

January 2020



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Nothing in these materials shall under any circumstances create an implication that there has been no change in the affairs of MRC since the date of this presentation. The information, if any, in this presentation which relates to Exploration Results, Mineral Resources or Ore Reserves for Tormin is based on information compiled by Dr Joseph A.P. Drake-Brockman, who is a Member of the Australasian Institute of Mining & Metallurgy (“AusIMM”) and is an independent consultant to the Company. Dr Drake-Brockman is an employee of Drake-Brockman Geoinfo Pty Limited and has over 36 years of exploration and mining experience in a variety of mineral deposits and styles. Dr Drake-Brockman has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the JORC Code (2012). The information from Dr Drake-Brockman was prepared under the JORC Code (2012). Dr Drake-Brockman consents to inclusion in the presentation of the matters based on this information in the form and context in which it appears.

The information, if any, in this presentation which relates to Mineral Resources for Munglinup is based on information compiled by Mr Chris De Vitry who is a member of the AusIMM and an independent consultant to the Company. Mr De Vitry is the Director and Principal Geologist of Manna Hill GeoConsulting Pty Ltd and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined by the JORC Code (2012). The information from Mr De Vitry was prepared under the JORC Code (2012). Mr De Vitry consents to inclusion in the presentation of the matters based on this information in the form and context in which it appears.

The information, if any, in this presentation which relates to the Ore Reserve for Munglinup is based on information compiled by Mr Daniel Hastings, who is a Member of the AusIMM. Mr Hastings is an employee of Hastings Bell Pty Ltd and a consultant to the Company. Mr Hastings has sufficient experience relevant to the type of deposit under consideration to qualify as a Competent Person as defined by the JORC Code (2012). Mr Hastings consents to the inclusion in the presentation of the matters based on the reviewed information in the form and context in which it appears.

The information, if any, in this presentation which relates to Exploration Results, Mineral Resources or Ore Reserves for Xolobeni is based on information compiled by Mr Allen Maynard, who is a Member of the Australian Institute of Geosciences (“AIG”), a Corporate Member of the AusIMM and independent consultant to the Company. Mr Maynard is the Director and Principal Geologist of Al Maynard & Associates Pty Ltd and has over 38 years of exploration and mining experience in a variety of mineral deposit styles. Mr Maynard has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the Australasian Code for reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves (“JORC Code (2004)”). This information was prepared and first disclosed under the JORC Code (2004). It has not been updated to comply with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (“JORC Code (2012)”) on the basis that the information has not materially changed since it was last reported. Mr Maynard consents to inclusion in the presentation of the matters based on this information in the form and context in which it appears.



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US\$ **853**<sub>M</sub>  
LOM revenue

**2.7** years  
Payback period

**30%**  
Post-tax IRR

US\$ **61**<sub>M</sub>  
Pre-production capital cost

US\$ **491**<sub>t</sub>  
Operating cost per tonne of product (FOB)

US\$ **111**<sub>M</sub>  
Post-tax NPV (7%)

US\$ **426**<sub>M</sub>  
LOM EBITDA

US\$ **240**<sub>M</sub>  
LOM post-tax net cash flow

US\$ **31**<sub>M</sub>  
Average annual EBITDA

END → 278.9



# FINANCIAL ANALYSIS

Item	Value
LOM revenue	US\$853M
LOM post-tax net cash flow	US\$240M
LOM EBITDA	US\$426M
Average annual EBITDA	US\$30.6M
Operating cost per tonne of product (CIF)	US\$573/t
Pre-production capital cost	US\$61M
Pre-tax NPV (7% discount rate)	US\$172M
Pre-tax IRR	36.4%
Post-tax NPV (7% discount rate)	US\$111M
Post-tax IRR	30.0%
Post-tax payback period	2.7 years

- A financial model was built for the purpose of analysing the cash flows that would be generated by the Project. The model was used to evaluate the cash flow effects of the mining schedule and process plant.
- The Net Present Value (“NPV”) and Internal Rate of Return (“IRR”) estimates are base case only and reflect robust EBITDA performance, debt funding of initial pre-production capital costs with payback within three years and US\$102 million in forecasted corporate tax payments to the Australian government.
- Cash flows were modelled on a “real” basis with no cost escalation, no sales price escalation, and no inflation. In addition, a discount rate of 7% was applied for the calculation of the Project NPV. The discount rate applied reflects the weighted average cost of capital expected from debt funding the Project.
- Preference for ring-fenced, limited/non-recourse project debt finance as opposed to a more general corporate debt finance.

Financials	Value
Receipts from customers	US\$853M
Payments to suppliers and employees	(US\$426M)
Income tax paid	(US\$102M)
Pre-production capital cost	(US\$61M)
Sustaining capital	(US\$25M)
Cash inflows from financing	US\$62M
Cash outflows to financing	(US\$62M)

# MINERAL COMMODITIES

## GLOBAL OVERVIEW

### Skaland

#### Flake Graphite

**Production** - Ore grades of ~28% Carbon at 10ktpa flake graphite concentrate production

### Tormin

#### Mineral Sands

**Production** - 2.4Mtpa Processing facility producing: garnet, ilmenite, zircon and rutile concentrates.

### Xolobeni

#### Mineral Sands Development

JORC Compliant Resource  
346Mt @ 5% THM

### Perth

Corporate Headquarters

### Munglinup

#### Graphite Development

Ore Reserve (Probable) of 4.24Mt at 12.8% TGC supporting mine life of 14 years with anticipated production of ~52ktpa of >95% purity graphite concentrate. Mineralisation open in all directions.





# BACKGROUND & INTENT

MRC's wholly owned subsidiary MRC Graphite Pty Ltd ("MRCG") entered into a Joint Venture Agreement on 17 November 2017 with Gold Terrace Pty Ltd ("Gold Terrace"), to Farm-in to the Munglinup Graphite Project. The Stage 1 Agreement gave MRC an initial 51% interest in the Project. In addition, there were provisions that allowed for the acquisition of a further interest in the Joint Venture.

Stage 1 Joint Venture Farm-in to 51%:

- AU\$3.2M cash payment representing acquisition cost to date incurred by Gold Terrace; and
- MRC issuing 10M ordinary shares.

Stage 2 Joint Venture Farm-in Agreement to acquire a further 39% Interest (from 51% to 90%):

- Completing a DFS by 17 November 2019\*; and
- AU\$0.8M cash payment and MRC issuing 30M ordinary shares to the Vendor.

Stage 3 Joint Venture Farm-In Agreement to acquire a further 10% (from 90% to 100%).

Vendor can elect that MRC acquires remaining 10% interest for full MRC ownership by:

- MRC issuing 10M ordinary shares; or
- MRC granting the Vendor a 1% gross royalty on all minerals produced; or
- Otherwise standard vendor contribution or watering down provisions to apply.

\* Due to delays, MRC requested and was granted from Gold Terrace an extension for the completion of the original DFS. The extension was granted until 31 December 2019.





# MUNGLINUP DEFINITIVE FEASIBILITY STUDY - OVERVIEW

The Munglinup Graphite Project (“the Project”) lies along the border of the shires of Esperance and Ravensthorpe on Western Australia's Fitzgerald Coast approximately 640km southeast by road from Perth. The Project is 4km north of the township of Munglinup on the South Coast Highway, 107km west of Esperance and 81km east of Ravensthorpe.

The Port of Esperance handles bulk grain and mineral exports and currently supports the export of nickel concentrates and iron ore from mining operations in Western Australia. Esperance has a regional airport with 3 flights per day to and from Perth. The flight time is approximately one and a half hours. The Project is 610km by road from the Port of Fremantle, from where it would export its graphite concentrate product.

The Pre-Feasibility Study (“PFS”) was completed in May 2018 and was predicated on the Project to mine and process 400ktpa of graphite ore grading 15.9% TGC over 9 years, producing a nominal 54ktpa of flake graphite concentrate resulting in an ore reserve of 3.4Mt at 15.9% TGC. The financial metrics from the PFS demonstrated robust project economics.

Following completion of the PFS, MRC made the decision to proceed directly to a Definitive Feasibility Study (“DFS”) based on the same project sizing as developed during the PFS.





# CAPITAL COST

Prepared by BatteryLimits, Mondium and MRCG, with the capital cost estimate for the process plant, infrastructure, associated equipment and project management costs at +15/-5%. The financial model allocated capital costs as either development capital, sustaining capital or pre-strip costs. Development capital reflects initial capital requirements to construct the process plant, project infrastructure and indirect capital requirements. Annual sustaining capital cost has been set at 3% of development and pre-strip capital.

## Capital Cost

Capital	Project Total US\$M
Development Capital	56.3
Sustaining Capital	25.5
Pre-Strip Capital	4.3
<b>Total</b>	<b>86.1</b>

## Project Development Capital

Capital	Project Total US\$M
Construction Distributables	4.3
Treatment Plant Costs	21.5
Reagents & Plant Services	7.0
Infrastructure	8.5
Management Costs	8.1
Owner's Project Costs	6.9
<b>Total</b>	<b>56.3</b>

## Sustaining Capital

Capital	Project Total US\$M
Sustaining Capital <sup>1</sup>	25.5
<b>Total</b>	<b>25.5</b>

1. The capital requirement for increasing throughput of the circuit to 500ktpa in 2027 is included in the sustaining capital estimate.

## Pre-Strip Capital Expenditure

Capital	Project Total US\$M
Clear/Topsoil Removal	2.3
Haul Roads	0.9
Mob/Establishment	0.8
Owner's Costs	0.3
<b>Total</b>	<b>4.3</b>

# OPERATING COST

The Project operating cost estimate includes costs associated with mining, processing, infrastructure and site-based general and administration costs.

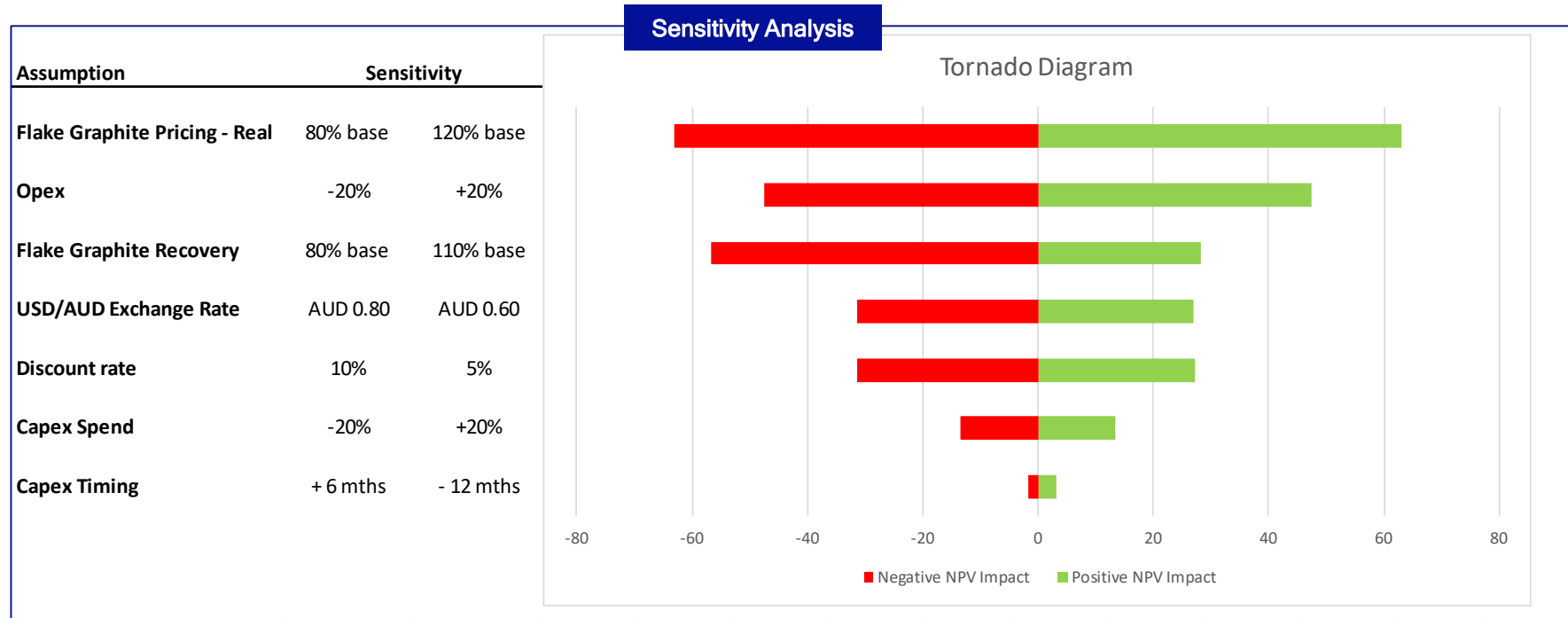
Operating Costs	US\$ M	US\$/t Sold
Mining	135.4	182
Processing	140.1	188
Indirect Production Costs	30.8	41
Trucking	60.0	80
<b>Total (FOB Fremantle)</b>	<b>366.3</b>	<b>491</b>
Shipping	14.0	19
Royalties	46.7	63
<b>Total (CIF)</b>	<b>427.0</b>	<b>573</b>

- Financial model functional currency of US\$ and operating cost estimates have been converted at an exchange rate of ~AU\$1.00=US\$0.70.
- The operating cost estimate has been prepared to an accuracy of +15/-5% by independent experts. This includes labour numbers, estimated salaries, maintenance costs, consumables required at the plant, diesel burn rates and plant power draw requirements.
- Industry standards, quotations from vendors or information from the operating cost database and information from the process design criteria underline the basis of the estimate (refer JORC Table 1 attached for additional information).





# SENSITIVITY ANALYSIS



- Sensitivities of the NPV to changes in key assumptions were analysed. These were run on the following key model assumptions: flake graphite pricing, flake graphite recovery, exchange rate, discount rate, operating costs, capital costs and construction schedule (capex timing).
- In each case, the effect of the sensitivities were considered based on historical observation of mining projects.
- The tornado diagram above shows the variance to the base case post-tax NPV for the Project (US\$111M). The most sensitive metrics are flake graphite pricing, opex and flake graphite recovery.
- The upside case for the flake graphite pricing forecast (120% base pricing forecast from Roskill) demonstrates a post-tax NPV of US\$174M. The downside case (80% base pricing forecast from Roskill) demonstrates a post-tax NPV of US\$48M.

# GEOLOGY & RESOURCE

- MRC has undertaken two additional drilling programs and re-estimated the Mineral Resource since acquiring the Project. The latest Mineral Resource has been prepared in accordance with the 2012 JORC Code and is estimated at **7.99 million tonnes at 12.2% TGC** using a 5% cut-off.
- The graphite deposits are located in the northern foreland of the Albany-Fraser Orogen and are hosted by paragneisses of the Munglup Gneiss. Structurally the prospect is located adjacent to the intersection between the northeast trending Fraser Range Fault and the northwest trending Merredin Fault.

Mineral Resource<sup>1</sup> Statement

Classification	Cut-off (%)	Resource Mt	Total Graphitic Carbon (%)	Contained Graphite kt
Indicated	5	4.49	13.1	588 kt
Inferred	5	3.50	11.0	383 kt
<b>Total</b>	<b>5</b>	<b>7.99</b>	<b>12.2</b>	<b>971 kt</b>

1. Mineral Resource estimated at a 5% TGC cut-off

Tenement	Area	Holder	Granted	Expiry
M74/245	685 ha	MRC Graphite Pty Ltd Gold Terrace Pty Ltd	26/08/2010	25/08/2031
E74/565	48 BL	MRC Graphite Pty Ltd	05/08/2015	04/08/2020
E74/505	2 BL	MRC Graphite Pty Ltd Gold Terrace Pty Ltd	23/10/2012	22/10/2022
L74/55	129 ha	MRC Graphite Pty Ltd	11/07/2019	10/07/2040
L74/56	21 ha	MRC Graphite Pty Ltd	Pending	
G74/9	26 ha	MRC Graphite Pty Ltd	11/07/2019	10/07/2040

The Munglup graphite deposits occur as discrete layers in a zone of graphitic schists within a sequence of hornblende and hornblende-garnet gneisses. The rocks have been broadly folded about a WNW/ESE axis, with superimposed minor anticlinal and synclinal flexures. Complex small-scale folding and faulting is common in the relatively incompetent graphitic rocks and the enclosing competent hornblende gneisses appear to be less deformed.

Targeted graphitic mineralisation occurs within saprolite consisting of clays, quartz, graphite (up to 42% flake) and goethite. Weathering extends down to at least 60m.

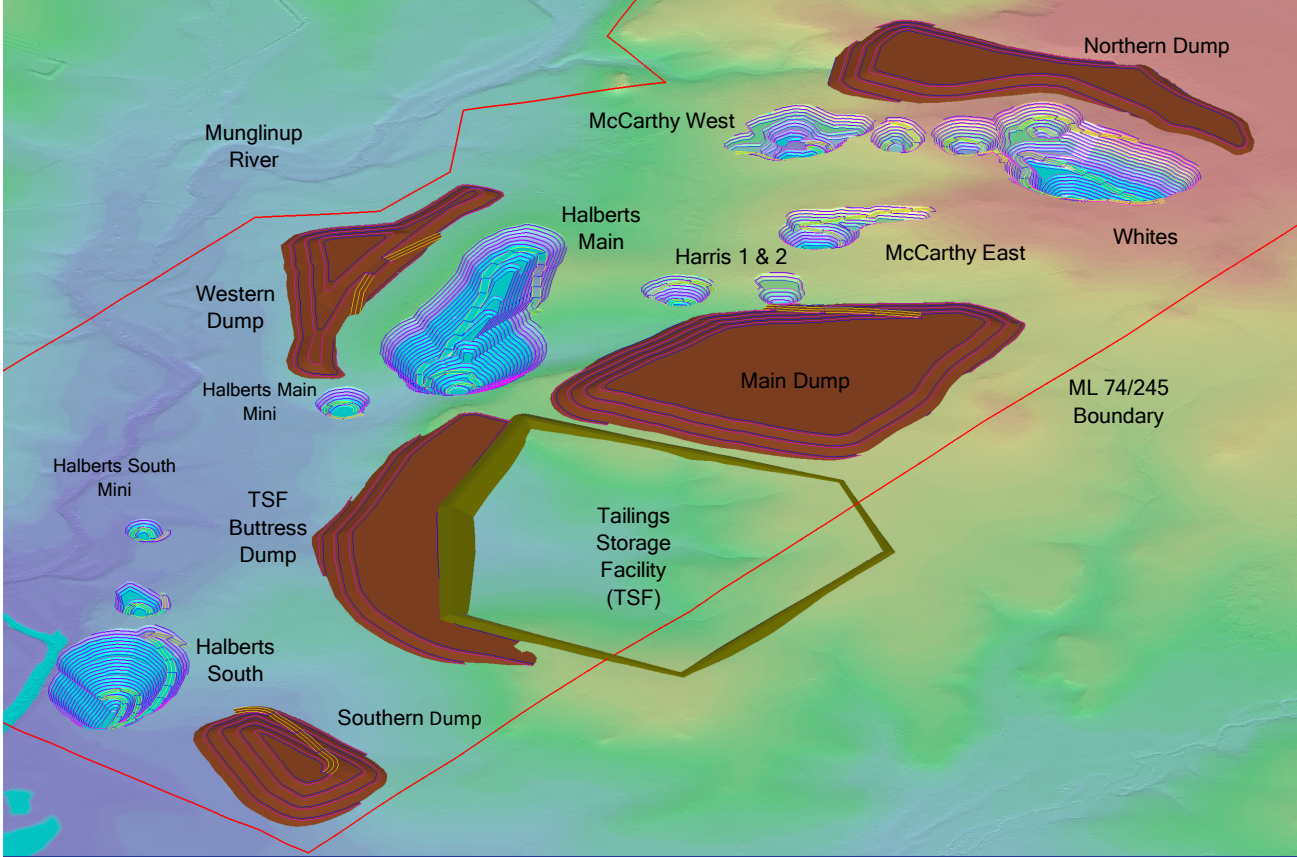


# MINING & ORE RESERVE

- The graphite distribution at Munglinup is well constrained and outcrops at surface. The mineralised zones lie within the weathered horizon, generally dipping to the east at around 50°. Material hardness measurements show that the deposit is free-dig with possible blasting required at the base of the deepest pits.
- The general mine layout has been developed so that dumps and infrastructure do not encroach on areas of likely continuing mineralisation that have yet to be drilled. Exclusion areas have also been established around significant environmental and heritage areas.
- Inferred material that is within the designed pits was included in the mine schedule using the same variable cut-off grade as the Ore Reserve. This material is generally included in designed cutbacks and predominantly scheduled later in mine life. This material will be upgraded by further drilling as part of the continuing resource development program.
- The optimised shells selected comprised 6 open pit areas, mined over 2 stages, which initially target the higher value areas earlier in the mining plan. The stage 1 pits were optimised on the Measured and Indicated material while stage 2 optimisations include Inferred material.

1. Ore Reserve uses a variable cash flow cut-off grade

2. In-Pit Resources comprise Inferred material inside the designed pits using a variable cash flow cut-off grade and do not constitute part of the Ore Reserves.



Ore Reserve <sup>1</sup>		
Category	Mt	TGC (%)
Proven	-	-
Probable	4.24	12.8
Total	4.24	12.8

In Pit Resources <sup>2</sup>		
Category	Mt	TGC (%)
Inferred	2.75	11.1

Current mine life stands at 14 years with the mineralisation open along strike and at depth

# MINING & ORE RESERVE

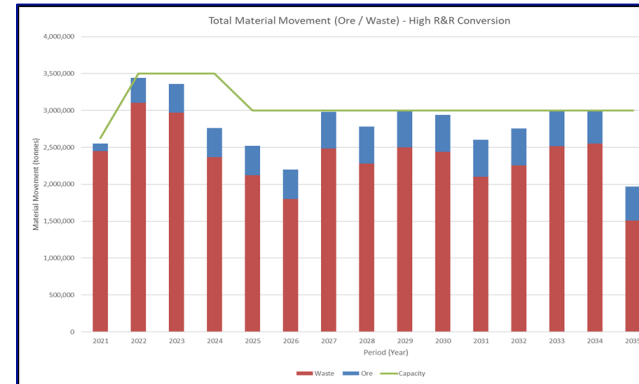
Continued.

- The mining method adopted is based on open pit mining and was evaluated assuming a traditional truck and hydraulic excavator operation.
- The operational philosophy is to only operate the mine during day shift, on a 5/2 roster. Run of Mine (“ROM”) operations will continue 24/7 and be owner operated, managed by the process plant. This arrangement will reduce noise/light issues and be more attractive to potential employees. This will also enable employees to reside in Esperance and operate on a daily bus-in/bus-out plan.
- Annual material movement is planned to be limited to 3.5Mt per annum for the first 3 years of operation then reducing to a maximum of 3Mt per annum.

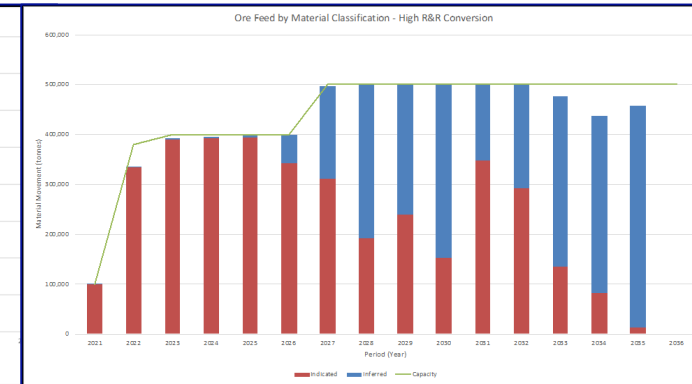
Total Inventory

Total Tonnes	Ore Tonnes	Waste Tonnes	Strip
41,864,276	6,987,996	34,876,280	4.99

Annual Material Movement



Annual Ore Feed by Material Classification



Grade and Distribution of Final Graphite Product

Flake Size	Sieve Size µm	BF1059 Bench Scale Test		BF1065 Bulk Test		Schedule Estimate	
		Mass Dist'n (%)	TGC Grade (%)	Mass Dist'n (%)	TGC Grade (%)	Mass Dist'n (%)	TGC Grade (%)
Super Jumbo	> 500	1.56	97.8	0.43	97.0	2.1	94.0
Jumbo	300 - 500	9.42	97.1	5.30	95.3	11.6	94.0
Large	180 - 300	17.6	96.7	16.0	97.5	20.8	94.0
Medium	150 - 180	8.88	96.2	12.5	98.2	8.4	94.0
Small	75 - 150	30.2	95.1	33.3	98.1	27.7	94.0
Fine	< 75	32.4	90.5	32.5	96.0	29.4	94.0
Calculated P80 (µm) and TGC Grade (%)		238	94.2	193	97.2	193	94.0



# METALLURGY

- Significant historical metallurgical testwork exists with more than 20 metallurgical studies undertaken on the Munglinup Graphite mineralisation. These studies focused on maximising the recovery of coarse flake by minimising grinding and using multi-stage leaching to upgrade the concentrate grade.
- **Samples and head assay** - The DFS Master Composite was formed from 86 intervals obtained from Halberts Main and Halberts South. The resulting composite contained 18% ironstone ore type and approximately 10% of near surface material.
- **Variability testwork program** - results showed that the high-grade final concentrates can be consistently produced with TGC grades ranging from **95.0% to 98.3%** after multiple stages of cleaner flotation.
- The DFS Master Composite was prepared and underwent large batch flotation tests in order to produce concentrate for vendor and marketing purposes. The flotation scheme was based on optimisation test work and utilised larger laboratory equipment.
- A 480kg bulk run produced a concentrate with a distribution close to that achieved in the smaller bench scale tests. The coarse flake fraction contained 48.6% of the mass with a TGC grade averaging 95.8%. The fines accounted for 51.4% of the mass with a TGC grade averaging 96%.

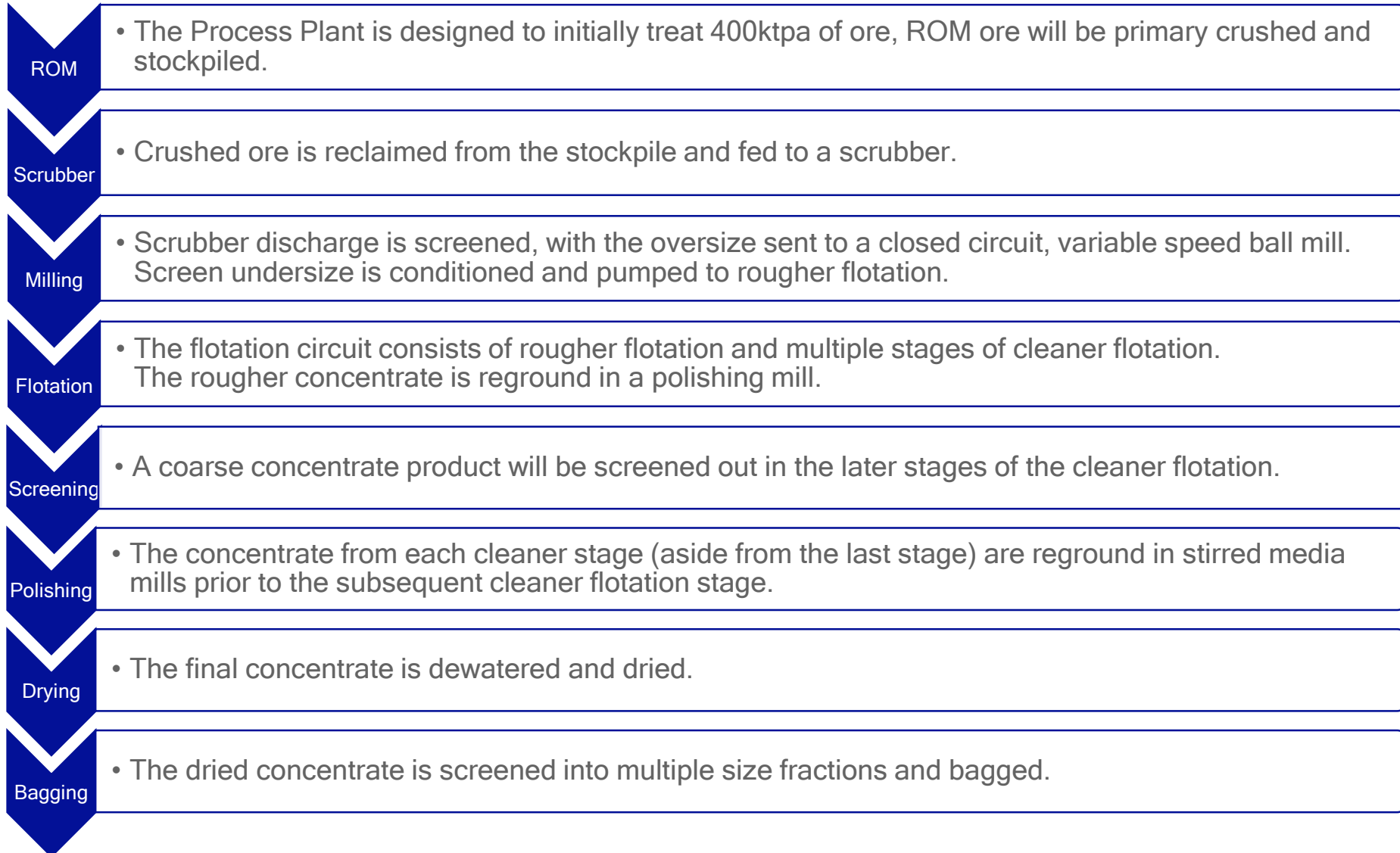
Final Bulk Concentrate Size and Grade Distribution

Flake Size	Micron (µm)	Mesh	Bulk sample Test BF1287	
			Mass (%)	Assay TGC (%)
Jumbo	300 - 500	50	17.7	96.0
Large	180 - 300	+80 -50	24.5	95.5
Medium	150 - 180	+100 -80	6.43	96.1
Small	75 - 150	+200-100	24.6	97.8
Fines	- 75	-200	26.8	94.4
Calculated P <sub>80</sub> (µm) and TGC Grade (%)			289	95.8

Flotation Results for the DFS Master Composition

Test ID	Final Concentrate				
	+150 µm (Coarse)		-150 µm (Fine)		Total TGC Recovery
	% Mass	% TGC Grade	% Mass	% TGC Grade	
BF1273	44.0	97.3	56.0	93.9	88.7
BF1281	48.4	97.7	51.6	94.2	86.6
BF1282	56.2	95.2	43.8	91.0	89.4
BF1289	57.0	95.7	43.0	97.2	86.4
BF1304	47.7	96.5	52.3	94.1	87.1
BF1305	46.4	96.5	53.6	98.3	84.9
BF1306	54.1	97.4	45.9	97.9	84.6
BF1334	51.4	95.1	48.6	97.6	85.8
BF1360					83.9
BF1363	49.3	97.1	50.7	95.6	67.0
BF1371	57.9	89.7	42.1	97.1	86.3

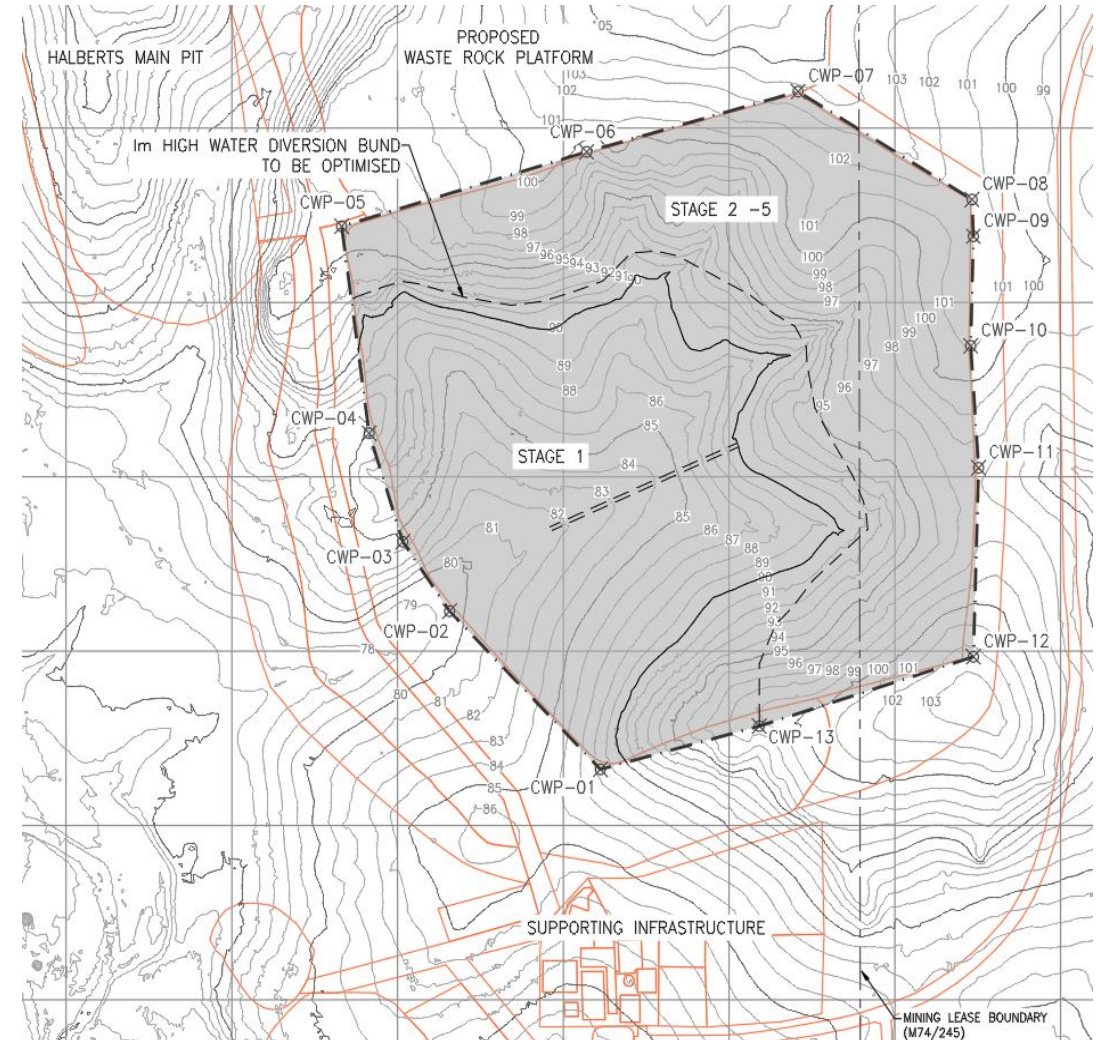
# PROCESS PLANT





# TAILINGS

- Tailings will be thickened and pumped to a conventional paddock/cross valley fill type TSF. The TSF will require storage of approximately 5.64Mt of non acid-forming tailings produced at a rate of up to 0.45Mtpa for a design life of 14 years.
- Based upon a proposed location within a natural saddle feature, an initial TSF options assessment for an aboveground TSF was undertaken. From this assessment, a centreline-raised, single-cell TSF located north of the process plant was selected for development. The centreline construction method minimises the reliance on the deposited tailings for strength and stability of the perimeter embankment, whilst utilising the mine waste material for construction of the raises.
- The starter embankment will then be progressively raised.
- The starter embankment will be constructed of compacted low permeability fill material sourced from the pit pre-strip operations and impoundment excavation works. Subsequent raises will be constructed of low permeability fill on the upstream section of the embankment, with mine waste material being utilised in the downstream zone of the embankment.
- The tailings will be pumped to the TSF as a slurry at a target solids concentration of 45% solids by mass. Deposition into the TSF will take place through spigots located along the perimeter embankments. A floating pontoon is proposed throughout the life of facility as it is anticipated that there will not be a centrally located pond for many years into the life of the facility. The water will be sent to a return water pond in the processing plant area for reuse.
- The results of a stability analysis indicate that the estimated factor of safety against failure is greater than the Australian National Committee on Large Dams (ANCOLD) (2012) recommended minimum values. The TSF is classified as a Category 1 dam according to DMIRS (2013).





# INFRASTRUCTURE & LOGISTICS

**Power** - The power requirements for the main process plant have been calculated at a total installed load of 5.3MW including all duty and standby equipment with an estimated average demand of the project being 2.5MW with a peak of 2.8MW.

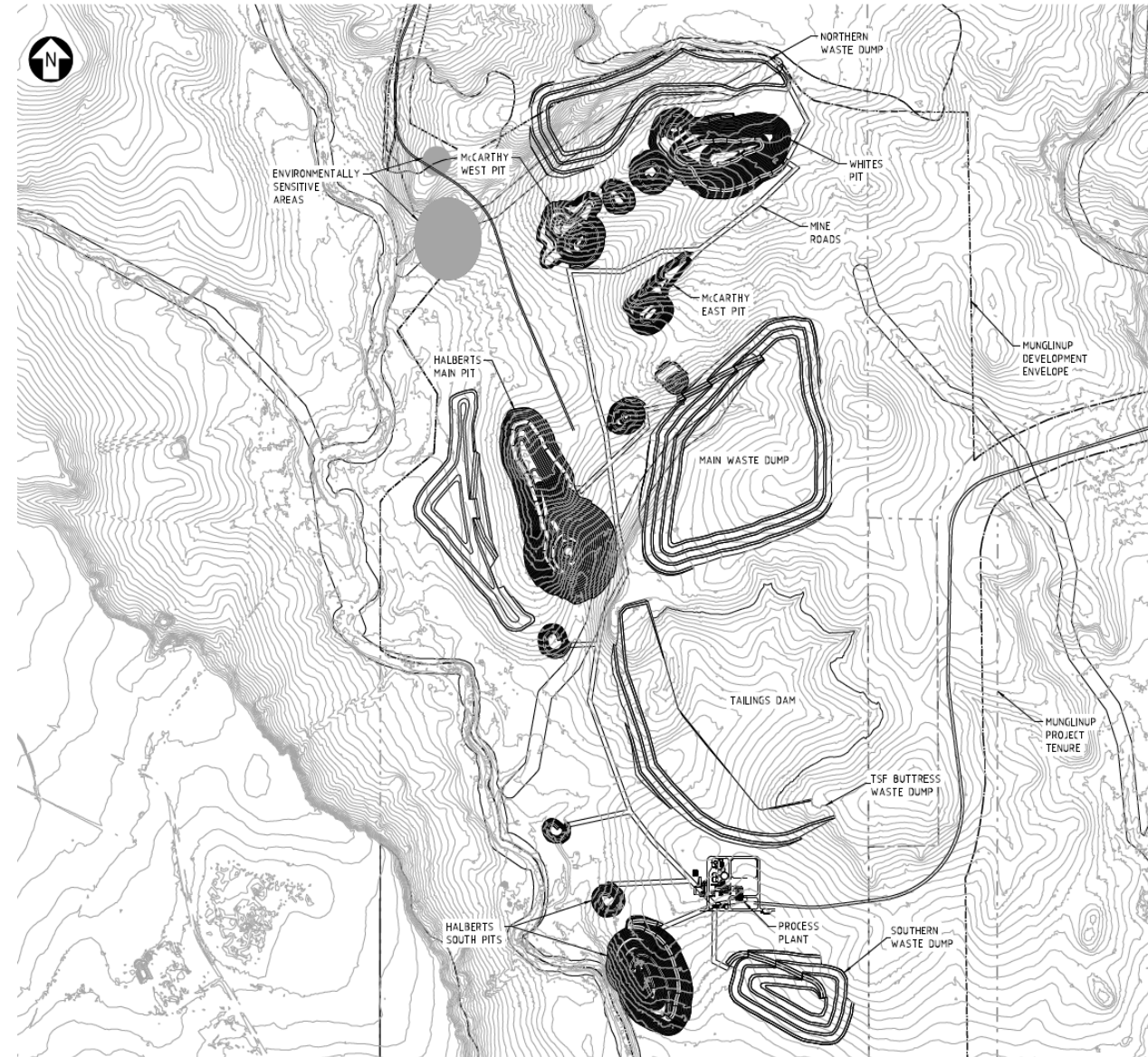
Power is proposed to be supplied by a 4.0MW power station supplying power to the plant at 415V. The location of the power station and the plant MCCs have been optimised to eliminate the need for high voltage transmission and transformers. The power station will be fuelled by trucked LNG based on an onsite storage and vaporisation facility with a storage capacity design allowance of a nominal 10-11 days.

**Water** - A bore field with several production bores has been drilled and pump tested to ensure that the bore field will support the operation.

**Buildings** - Plant, administration, and infrastructure areas will be modular/prefabricated or containerised. An onsite laboratory will be constructed to support the operation. Accommodation for personnel is planned to be available in nearby townships.

**Roads** - Project access is proposed via the South Coast Highway. The new site access roads will be constructed in accordance with appropriate Restricted Access Vehicle ("RAV") requirements.

**Logistics** - Product will be transported via road train travelling 610km for delivery to the Port of Fremantle. Product will be loaded into bulka-bags with a nominal weight of one tonne prior to transport via tautliner trailers. Approximate product weight per trip is 60-65 metric tonnes. It is estimated that approximately 3 triple road-train combinations will transport product to Port of Fremantle each day on a 5 day per week basis.





# HUMAN RESOURCES, ENVIRONMENT, SAFETY & COMMUNITY

**Land Use** - The Project is situated within Mining Reserve R24714 which is vested to the Department of Mines, Industry Regulation and Safety (“DMIRS”).

**Tenure** - MRCG and Gold Terrace are the tenement holders for tenure associated with the Munglinup Graphite Project. Four tenements are required to develop the Project under the Mining Act 1978 (WA). Project tenure includes the granted M74/245 and General Purpose Lease G74/9, and two Miscellaneous Licences, L74/55 and L74/56.

**Native Title** - Native Title has been found to be extinguished within the Mining Reserve.

**Community Development** - A comprehensive Community Engagement Plan has been developed which identifies key stakeholders and interest groups on which the Project may have an impact or could provide a social or economic benefit to, and how MRCG plans to interact and communicate with them.

## Status of Environmental Approvals

Following directions from the WA Environmental Protection Authority and the Commonwealth Department of Energy and Environment in July 2019, additional studies are required for EPA and EPBC Assessment. These studies cover:

- Level 2 terrestrial fauna
- Level 2 SRE fauna assessment
- Additional hydrology and hydrogeological assessment
- Supplementary flora assessment
- Additional dieback assessment
- Ecological linkage assessment

It is expected these **additional studies will be completed in March 2020** and that a final submission to the EPA would be made shortly thereafter. Providing there are no issues, the **EPA and EPBC approvals for the Project will be completed in Q3 2020.**

Role	Persons
Site Management and Administration	8
Owner’s Mining Team	2
Processing	35
Maintenance	10
<b>Subtotal Plant Workforce</b>	<b>55</b>
Laboratory Contractor	3
<b>Total Workforce</b>	<b>58</b>

**Human Resources** - total operational workforce is estimated to comprise 55 personnel, of which 21 will be employed on a continuous shift-based roster and the remaining will be employed on a Monday to Friday, daytime only roster. Mining will be undertaken by an additional mining contractor. Workforce recruitment for the Project will focus around the Esperance Shire and surrounding regional areas with a bus service to site daily to mitigate risks arising from fatigue.

# MARKETING

- Revenue estimates are based on independent market pricing and life-of-mine concentrate production of 745,022t at an average 52,000 tpa of production.
- The basket price used in the model has been calculated based on pricing obtained from Roskill Information Services Ltd's latest market report: "Natural and Synthetic Graphite: Outlook to 2028, 12th Edition" ("Roskill Report").<sup>1</sup>
- Flake <150µm product utilised for Battery Anode Material production
- MRC is positioning itself to be a Specialty and High Value Graphite Producer

Product	Price (USD/t )	Quantity	Total (US\$'000)
S Jumbo	\$2,787	15,273	42,561
Jumbo	\$1,990	86,548	172,269
Large	\$1,130	155,053	175,228
Medium	\$1,077	62,851	67,712
Small	\$930	206,588	192,189
Fine	\$927	218,708	202,641
<b>Total</b>		<b>745,022</b>	<b>852,600</b>

Weighted Average Price

**\$1,144**

1- Forecast prices (real) for natural flake graphite (94-97% carbon) 2018-2028 for fine, medium and large flake were incorporated into the model.

Proposed Standard Products		
Size	Product	PSD*
500µ / +35 #	MRC35/MRC Super Jumbo	2%
300µ / +50#	MRC50/MRC Jumbo	12%
180µ / +80 #	MRC80/MRC Large Flake	21%
150µ / +100 #	MRC100/MRC Flake	8%
75µ / +200 #	MRC-100/MRC Fines	57%
25µ / +550 #		

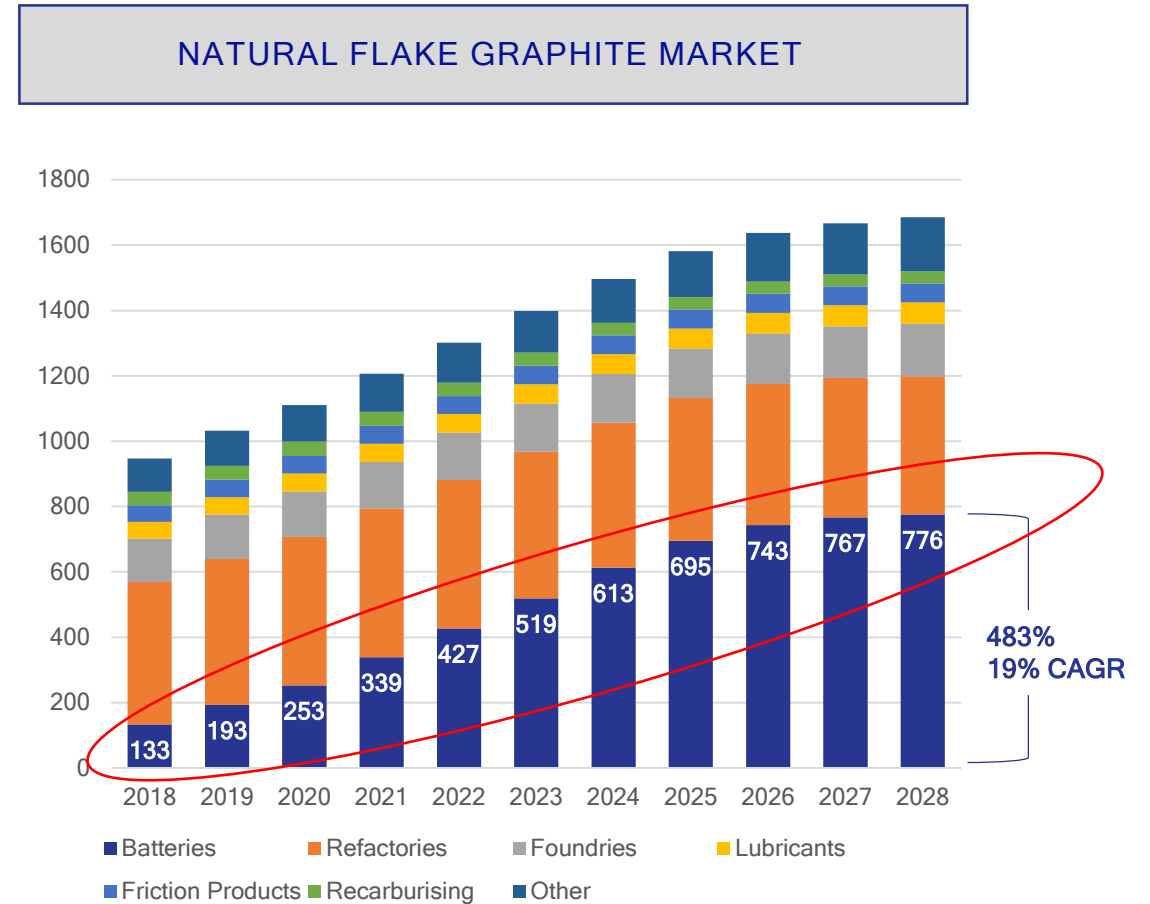
\* PSD - Product Size Distribution.



# PRICING NATURAL FLAKE GRAPHITE MARKET

10 year forecast - Traditional natural flake graphite demand is forecasted to grow just 12%. Battery demand will grow by 483%.

- Graphite, a form of Carbon, has two main types - Natural and Synthetic. The combined Natural and Synthetic graphite has a market size of some 2.52 million tonnes (2018). Natural graphite accounts for 38% of this market.
- The graphite market is an opaque market where most information is not readily available and market analysis is based on some available data combined with estimations.
- The refractory market still has the biggest share in graphite consumption and graphite mainly goes into Magnesia Carbon bricks for iron and steel production.
- Battery markets, especially Lithium-ion Batteries, represent the fastest growing market and their main demand driver is Electric Vehicles.
- Prices are expected to rise in the long-term with rapid growth in demand from the lithium-ion battery industry underpinned by uptake of electric vehicles and energy storage systems.
- Roskill forecasts that demand for natural graphite will grow from 947kt in 2018 to 1,686kt in 2028 - a CAGR of some 5.9% p.a.
- Demand from battery markets will grow by 483% from 2018 to 2028 or at a CAGR of 19%.



YoY Growth

45%

31%

34%

26%

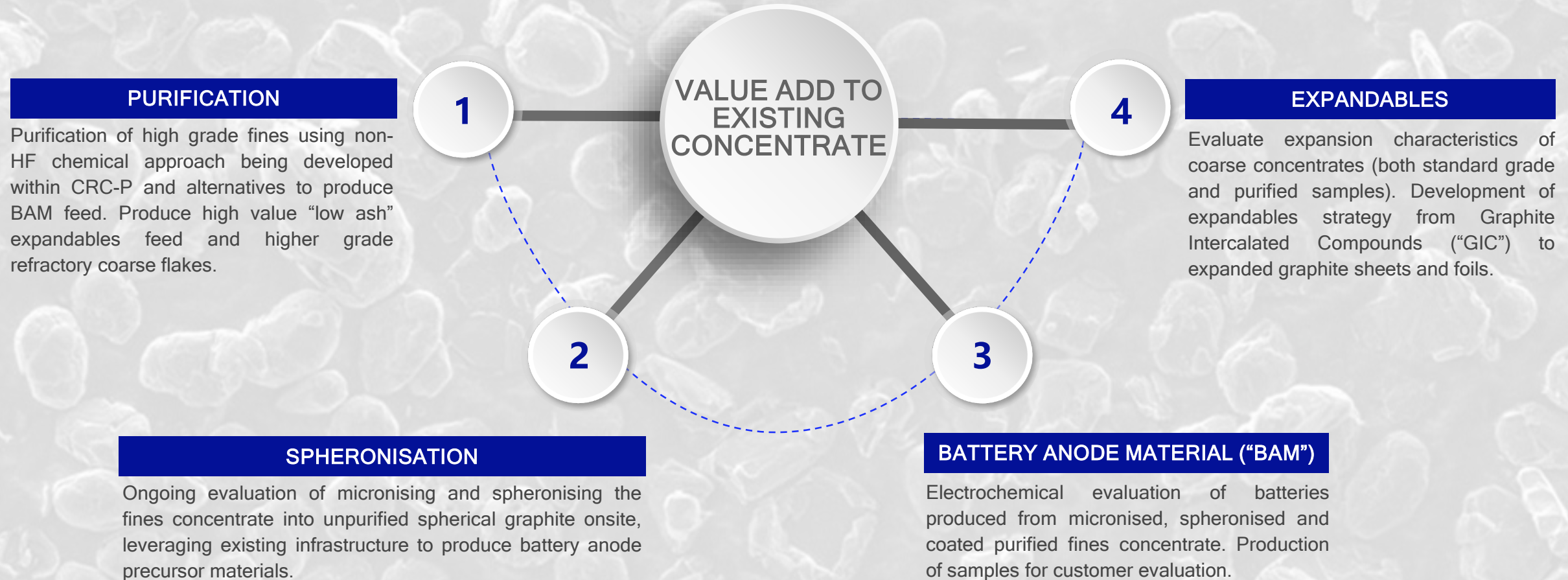
22%

1%

Source: Roskill, Base case, World Forecast demand for natural graphite by application, 2018-2028. Roskill Natural & Synthetic Graphite, Outlook to 2028, 12<sup>th</sup> Edition. July 2019.

# KEY DOWNSTREAM VALUE PHASES

Ongoing





# PROJECT IMPLEMENTATION

A Project Execution Plan (PEP) provides certainty in terms of Project delivery schedule and cost.

## Three Phase Project Execution Strategy

### 1. Phase 1 - ECI: An initial Early Contractor Involvement (“ECI”)

EPC Contractor will work in collaboration with the DFS Consultants to define the project scope - **COMPLETED Q4**.

### 2. Phase 2 - FEED: Post-DFS

Engineering Project Management (“EPM”) works to generate detailed pricing including engagement of Early Works Contractors and ordering long lead equipment items until the finalisation of permitting and decision to mine.

### 3. Phase 3 - EPC Delivery:

Based on either a Fixed Price Contract (“FPC”) or Target Cost Estimate (“TCE”).

## Project Schedule/Milestone

Description	Target
Decision on EP Act & EPBC Act Referral	Mar 2019
Completion of Feasibility Study	Jan 2020
Supplementary EP Act Submissions	Apr 2020
Front End Engineering and Design (FEED)	Jul, 2020
Decision on Environmental Approval	Aug 2020
Start Construction and Earthworks	Q4, 2020
Commissioning	Q3, 2021
Production and Ramp-up	Q4, 2021

# RISK MANAGEMENT

- 75% of the risks are in the Medium and Management Action category, with the balance of the total risks in the Low range. This is typical of mining projects that have not yet received environmental approvals to allow construction to commence. The Project is likely to result in a lower risk profile once additional controls are effectively applied.
- It is the intention of the Company to implement a vertically integrated development strategy that will provide a broader range of higher value products and diversify the risks associated with supplying the traditional graphite market.

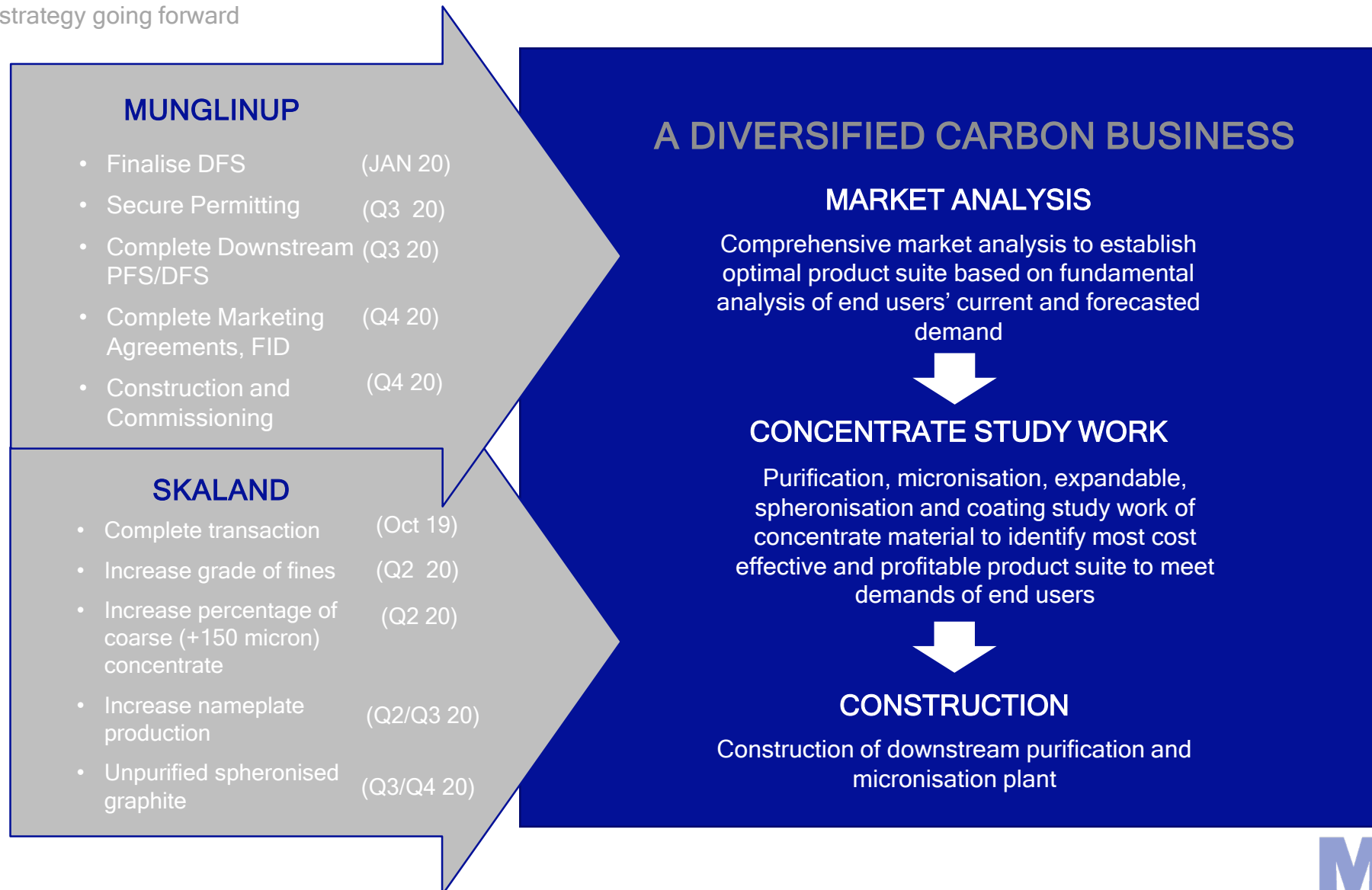
Legend	Low	Medium	Management Action	Priority Action
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Risk Matrix Profile DFS 2019

		Consequences				
		Low (1)	Minor (2)	Moderate (3)	Major (4)	Critical (5)
Likelihood	Almost Certain (A)					
	Likely (B)		<ul style="list-style-type: none"> <li>Construction Risk</li> </ul>	<ul style="list-style-type: none"> <li>Ramp up</li> </ul>		
	Moderate (C)		<ul style="list-style-type: none"> <li>Geotechnical Stability</li> <li>Acidic and Waste Rock Filter Washing Performance</li> <li>Environmental Management - Operations &amp; Construction</li> <li>Stir Mill Performance</li> </ul>	<ul style="list-style-type: none"> <li>Development Schedule - Corporate</li> <li>Provision of Vendor Test Samples</li> <li>Product Handling</li> <li>Disenfranchised TO</li> <li>Dispersive and Erodible Waste Material</li> <li>Water</li> <li>General Site Safety</li> <li>Environment and Permitting Approvals</li> </ul>	<ul style="list-style-type: none"> <li>Legal</li> <li>Operating Cost</li> <li>Graphite Price</li> </ul>	
	Unlikely (D)		<ul style="list-style-type: none"> <li>Exchange Rate Fluctuations and Escalation</li> <li>Pit Inflow</li> <li>Availability of Contractors</li> <li>Extreme Weather Impacts</li> <li>Product Logistics</li> <li>NGOs</li> <li>Consumables (Diesel/LNG) Supply</li> </ul>	<ul style="list-style-type: none"> <li>Crusher and Scrubber Performance</li> <li>Insurances</li> <li>Resource Risk</li> <li>Flotation Performance Risk</li> <li>Legal</li> <li>Legal</li> <li>Community</li> <li>Owner's Costs</li> <li>Product Quality</li> <li>Medical Systems and Facilities</li> <li>Ore Representativeness and Variability</li> </ul>	<ul style="list-style-type: none"> <li>Legal</li> <li>Environment</li> <li>Production Capacity</li> <li>Tailings Storage Facility (TSF)</li> </ul>	<ul style="list-style-type: none"> <li>Tailings Storage Facility (TSF)</li> </ul>
	Rare (E)		<ul style="list-style-type: none"> <li>Site Layout</li> <li>Capital Cost</li> </ul>	<ul style="list-style-type: none"> <li>Plant Performance</li> <li>Port Export</li> </ul>	<ul style="list-style-type: none"> <li>Onsite Traffic Movements</li> <li>Road Safety Risk</li> </ul>	<ul style="list-style-type: none"> <li>Environment and Permitting Approvals</li> </ul>

# FOCUS FOR FUTURE SUCCESS

MRCG strategy going forward





# ASX ANNOUNCEMENTS

- 11/09/2017 MRC to acquire 51% interest in Munmlinup Graphite Project
- 13/09/2017 Further Resource Information - Munmlinup Graphite Project
- 27/11/2017 Munmlinup Graphite Project Scoping Study Results
- 13/12/2017 MOU with Doral - Spheroidisation & Purification of Graphite
- 08/02/2018 Munmlinup Met Tests Confirms Premium Flake Graphite
- 08/05/2018 Munmlinup Expandable Graphite Testwork Results Positive
- 10/05/2018 Additional Expandable Graphite Testwork Results Information
- 30/05/2018 MRC Munmlinup Graphite PFS Confirms Robust Project
- 05/06/2018 High Grade Extension Drilling Results At Munmlinup
- 08/06/2018 MRC Acquires Strategic EL Adjacent to Munmlinup
- 06/09/2018 Munmlinup Testwork Delivers Positive Variability Results
- 22/10/2018 Positive Munmlinup Graphite Optimisation Testwork Results
- 17/12/2018 MRC and Doral Extends Downstream Graphite Processing MOU
- 27/03/2019 MRC Awards Early Start Engineering Contract To Mondium
- 17/04/2019 Up to 49.3% TGC High Grade Results at Munmlinup

