“Our Vessel’s arrival in China with the finest of sinter, signified a huge milestone in the completion of the production value chain of Kalagadi Manganese”

- Daphne Mashile-Nkosi
- Executive Chairperson
MAMA D SPEAKS TO HER “A” TEAM

With the year now firmly entrenched and hurrying towards the second half, I want to take this opportunity to thank each one of you for being a part of the Kalagadi family. I appreciate your hard work and commitment which have ensured our pursuit for success for all. You are all an integral part of Kalagadi’s successes.

I’d also like to share with you the exciting plans we have from here on and into the foreseeable future. Firstly, I’m excited about the production underground. I’m thrilled with the progress of the sinter and what it’s currently producing.

The rail is beginning to come together satisfactorily as well. Indeed we have been implementing much to ensure that the business grows. We are also excited about the positivity illustrated by the results of pre-feasibility studies of the open pit which shows that we will produce 1.8 Million tonnes over and above the 3 Million tonnes per annum that’s being currently produced.

We have been on this path for many years and I’m happy and energized by new opportunities which have presented themselves. They are testimony to the collective hard work of the Kalagadi family of which we will forever be grateful to for their unwavering determination. Human resources and development is a key component in our strategy to unlock an increase in capacity to produce more.

We encourage each and every staff member of the company to devote themselves to executing their duties with diligence as well as making a call to action for staff to develop their skills growth potential. Development forms a big part of a strategy that will help us increase productivity which in turn will also positively impact on the already low rating of South African production levels. Understandably the known turmoil of the South African economy harvests uncertainty on so many levels. Let me ease your mind and tell you that Manganese production is secure going into the Fourth Industrial Revolution. The advent of the solar age as a prime example shows that solar batteries last longer when manufactured using 80% Manganese. This is an exciting prospect for our production. Even the automotive and medical industries will benefit from components produced with manganese in new technologies of electric vehicle batteries and from a nuclear medicine point of view. All of these exciting new developments come against the backdrop of difficulties for every sector. Despite all of this, I’m very happy with the state of Kalagadi and its prospects.

There is still plenty to be achieved going forward. I wish you and your families’ joy, peace and warmth during these winter months.
I am excited that Kalagadi has established an accessible platform from which I will regularly communicate with you.

This newsletter will also be a great platform to share and hopefully help all of us to understand the plans, vision, values and aspirations that the company has, as we will need your commitment to get us to achieve them.

2018 was an eventful year and the beginning of Kalagadi operations in earnest, moving from a project phase to a production phase. This came with many challenges and lessons learnt quickly from the operational phase. We achieved some success as well. We are still working through some challenges at the moment, which require our focussed attention, as we are ramping up towards full capacity of the mine. There are however a few matters that I would like to focus on in this first edition of the newsletter.

- Our safety and that of all our stakeholders is paramount to the success of our mine as we drive towards “Zero Harm” at Kalagadi. Safety at Kalagadi must be a lifestyle.

- Closely linked to safety is housekeeping. Housekeeping at our mine is important. The look and the feel of the mine complex is the first impression that we give of ourselves. The neglect of the facilities, spillages and the waste that is lying around the mine is concerning for such a new mine as ours. I expect you to address such challenges amongst yourselves with immediate effect. The outcome of which should be upheld as a standard we commit to always.

- The culture that I believe we need to be working towards is that of capable and engaged employees where we meet and exceed our commitments timeously.

- Operational effectiveness and excellence requires us to have systems and processes in place, so that we can achieve predictable and sustainable performance.

Our ability to take our sintered product to market is reliant on the constant achievement of our production targets. To that end, we require equipment that is reliable. The maintenance philosophy that we need to inculcate is embodied in the recently launched Maintenance Management Framework (MMF) project. I am sure that this project will receive your full support.

I will be appraising you of more developments in the next issue of the Kalagadian.

Thank you and keep asserting yourselves!!
THE MINE OVERVIEW
BY THE GM

With the sinking of the twin shaft systems (Main and Ventilation shaft) completed in 2009, underground developments immediately commenced. This was followed by the construction and equipping of underground infrastructure.

All this signified the existence and entry of a serious manganese mining contender into the playing field, Kalagadi Manganese. The start of the civil construction of the Ore Preparation Plant in October 2012 was another step in the actualization of our strategic intent in beneficiating the manganese ore. It was then followed by the construction of the Sinter plant which was completed in December 2016.

In 2014, the company concluded a mining contract with Murray and Roberts, Cementation (MRC). All conditions precedent in accordance to the agreement with the MRC were fulfilled in December 2017, enabling the EPCM to start mobilizing in January 2018.

The first official blast for production (post sinking & development) was initiated on the 9th March 2018.

With production in full blown stage, our focus on safety, health and environment remains more heightened at the mine, as a result we continue to urge our colleagues at the mine to be extra precautious towards their own safety and that of others, who may be affected by their work. The Zero Harm strategic policy position we have adopted has yielded results as we continuously get industry recognition for being the safest mine in the Northern Cape.

Kalagadi Manganese closed-off the first year of operations developing over 3KM using mechanised drill and blast methods from Thembeka Myedi Shaft. This development is aimed to housing critical infrastructure including: Crusher & Conveyor networks and ventilation districts. We have also performed at 111% of the baselined scope during project planning.

The shaft connects to the Ore Processing Plant (OPP), preparing feed for the Sinter Plant. Commissioning of the OPP began in August 2018, lagging four months from the mining start-up, a strategy implemented to maintain a steady feed to the processing plants. The OPP has since ramped-up from a single shift, to a three-shift configuration, processing over 430 000 tonnes at the end of the first year.
OPERATIONS PERFORMANCE

Sinter Plant’s performance exceeded expectations as it had been previously commissioned. The first shipment of Kalagadi Manganese Complex has also been delivered to its customers, within specification by the end of the first production year.

OUR PEOPLE

Our people remain critical to our success as an operation, and hence Kalagadi maintains an operational collaborating culture of mutual respect, care and accountability. “Our people” is a representative term of all our stakeholders including: Our Employees, Suppliers, Regulators and Shareholders. Kalagadi has had a positive impact in its host community, employing its members in an inclusive manner across different age-groups, ethnic, and gender.

QUALITY

Quality for Kalagadi Manganese is a journey, it requires to be initiated and maintained to the end of the project cycle. I have personally been disappointed as the General Manager of Kalagadi Manganese, at the operations quality control, and have since undertook a position to constantly engage, and inspire my leadership and execution teams, in maintaining best practices. The underground operation is to focus on mining discipline whilst the Processing Plants’ focus will be proactive maintenance, preventing spillage and carry-back along the plant and housekeeping. Our strategy is to focus on preventive techniques including: training, equipping, maintenance and time allocated to do things right, supported by appraisals like: inspections, testing & calibration, and audits to eliminate failure cost related to non-conformance.

Great effort has been demonstrated by the mining and ore processing team on waste and reef separation, necessary to ensure that maximum value can be derived from the project phase.

COST PERFORMANCE

Cost management is of utmost importance in Kalagadi Manganese. Policies and processes in place have yielded great benefit for the business and Kalagadi continues to operate below its cost baseline. Initiatives like Activity-Based-Costing are gaining traction to ensure that our costs are predictable and measured. Managing spend and cost remain at the top of our agenda, and conversations transitioning beyond direct cost to also monitoring and controlling indirect cost, driven by efficiencies.

OUTLOOK

With a relatively broad-based global view of Kalagadi Manganese Mine Complex, our expectation is to continue with growth going in to the next quarter. We continue to understand our asset better, through managing data and knowledge, allowing us to make improvements in our planning assumptions across the business. Our key focus areas remain in delivering on our strategy, harnessing opportunity and using innovative ideas to elevate constraints.
DELIVERY ON STRATEGY

The first year of operations has presented the teams with lessons learned, necessary to leverage for years to come.

Cost, Quality and Schedule remain the triple constraints of this project. All efforts remain in the monitoring and control area, effectively engaging our EPCM contractor executing the project scope in managing and elevating these constraints.

Although the project produced 11% ahead of its baselines schedule, below its cost baseline, reflection from the team demonstrates that opportunities are available to perform better than the closing performance of the first year, with better planning, effective monitoring and control.

OPPORTUNITY

As we develop more knowledge about the asset, and update our base assumptions, there is plenty of room for improvement. Optimising the processing plants through test work, currently in progress, using our own material to produce durable sinter and undertaking scheduled maintenance expeditiously will yield positive results that build confidence in the market and affirm our positioning.

The mine operations present opportunity to increase the efficiencies of our physical resources, boosting the moral of our teams necessary to yield safe performance ahead of schedule, below our cost baseline at the right quality.

Managing project knowledge remains critical for us, in the current artificial intelligent (AI) era we operate in, to better understand our business, allowing us to be agile, and able to respond to enterprise environmental factors outside our control.

INNOVATION INITIATIVES

Analysis of data presents our teams opportunity to use innovative ideas to elevate constraints. Initiatives making progress including:

- Simulation of underground operations to refine the activity duration estimates, and better plan work in a safe and efficient manner
- The analysis of the skip loading path, necessary to create float in loading activities.
- Rolling wave planning to enable agility in responding to constraints, and delays.

Wonder Zwane
General Manager - Kalagadi Manganese
As a major ingredient of steel, the aggressive infrastructure development taking place in mainly in China/India has propelled the demand for manganese ore immensely, resulting in an increase in supply over 2017-2018. This is mainly due to production increase in South Africa, Gabon, Australia and China in the main. Kalagadi is positioned to be a supplier of high grade quality manganese sinter above 40-44% when at steady state.

The impact of the increased supply of manganese ore has also resulted in an increase in the downstream production of mainly silico manganese and to a lesser extend high carbon Ferro-manganese. This has resulted in an oversupply of alloy in the market resulting in a decrease in price per ton which would then have an impact on price of input cost i.e. Manganese ore in the main. This trend continues and the consensus is that manganese prices should correct downwards to enable the alloy producers to make margin especially outside China.

The world’s supply of manganese ore decreased by 6% month-on-month in November 2018 due to production cuts in most global regions, according to the latest research published by the International Manganese Institute (IMnI) on Friday January 4.

Supply totalled 1.71 million tonnes of manganese units in October, which was an increase of 16.3% year-on-year, with global suppliers ramping up to feed manganese alloy smelters in China, the IMnI said.

Manganese ore prices had another strong year in 2018 and Fastmarkets 37% manganese ore index, fob Port Elizabeth, at $5.36/dmtu as at March 15 2019.

Kalagadi was poised to take advantage of the high price at which Manganese was traded during November, This implied that production processes at Kalagadi had to be responsive to the demand at that time and had its maiden bulk vessel, the ‘Ultra Cory’ loaded and departed PE with 44 000 tonnes of manganese sinter to the East.
KALAGADI SINTERED MANGANESE ORE MAKES IT TO MARKET

BY DR. ZAKHELE MASHILE: MARKETING EXECUTIVE

MN MARKETS

CONT.

WWW.KALAGADI.CO.ZA
December 19th 2018 marked a special occasion for Kalagadi as its maiden vessel docked at the Port Elizabeth (PE) port. Preparations for this day had taken some time, however, it was watched with almost disbelief as it arrived as such had not been experienced before, a first for Kalagadi.

The vessel, named the Ultra Cory, is registered in Panama and was under the stewardship of Captain Zulkarnain. When Kalagadi booked it, it was fortuitously already in South African waters coming from South America and it took two days to present itself at Port Elizabeth.

It arrived at 03h00 and was immediately allowed to proceed for berthing. Typically, when a vessel calls in, it first announces itself and it may take a day or two before it is allowed to proceed to enter port. In the case of the Ultra Cory that was not the case. Arrangements had already been made for it to immediately come through to port and load Kalagadi’s first dedicated load of sinter processed from our own Kalagadi mined ore.

The Ultra Cory is a relatively new vessel, built as recently as 2014. It is 199.98m long with a breadth of 32.24m. This is about as long as two soccer fields. Closer to home, considering Kalagadi’s own assets, the Ultra Cory is just 2m short of the length of the Kalagadi rail bridge.

Loading the Kalagadi cargo was also performed expeditiously. The vessel completed loading on December 22nd and departed at 01h00 on the 23rd. By the time Christmas arrived, Kalagadi’s maiden vessel was already in the deep seas carrying that precious cargo: the very first sinter to be produced from Kalagadi own material.

As we would have it, the quality of the Kalagadi manganese ore delivered by this vessel at the discharging port in China was tested by CIG laboratories for moisture determination, size and chemical analysis using the method and procedure based on the relative standards of the PR of China with the results summary indicating that the material performed extremely well in retaining its structure with only 3.8% being at -6mm.
OVERVIEW

The 9th of March 2018 was abuzz with activity as the mine development entered the production phase with a single crew slipping the existing excavations to ensure adequate clearance for planned fleet. Development of excavations immediately followed and is still in progress as per project scope to ensure the milestones are achieved to enable the steady state throughout. The critical path still remains the development of the conveyor loop and installation thereof, these activities present no float, and opportunities are currently being explored to compress the schedule. Primary fleet has been acquired timeously as per required schedule, however the development of experience crews, required to utilize the available machines still remains a challenge, resulting in suboptimal machine utilization. Silo provide storage for broken rock to minimize interruption of the mining cycle. Silo 1 underground still requires to be slipped to increase its capacity to design. The surface Run-of-Mine Silo has presented itself to be constrained by the primary crusher on surface, resulting in initiatives being explored to create a bypass, at the Silo and in turn will create an open circuit resulting in the provision of opportunities to separate waste and reef.

HIGHLIGHTS

The project completed its initial 12 months with over 3 kilometres of development completed, resulting in just over 484 000 tonnes produced, 46 565 tonnes ahead of its baseline schedule as at end of March 2019.

Safety performance for the first 12 months of production has been exceptional considering the use of new teams executing the work. Regrettably, two Lost-Time Injuries were recorded by Thembeka Mnyedi shaft for the months of November 2018 and March 2019.

Designs of infrastructure required to maintain the steady state production i.e. High-rate settler, Workshops, Diesel reticulation, Tyre bay and Ventilation flow, have all been completed and development is underway. The diesel bay excavation is complete, and the High-rate Settler excavation is ahead of schedule.

During this time, the skip capacity was increased from 7.5 tonnes to 12.5 tonnes. This increase will have to be licenced by the Department of Mineral Resources.

Cage alterations are currently in progress to increase the cage height and length, allowing for the cage to accommodate higher and longer TMM & Material within its payload and improved clearance of Trackless machines.

Focus of the mining team remains on the critical path to develop the conveyor excavation & ventilation loop, with installation of crushers swiftly logging the conveyor installations required for primary crushing underground. Provisionally all efforts are set on blast fragmentation to reduce the duty on the single primary crusher in place. This supports the objective of having four mining sections, of independent ventilation district required to achieve the steady state throughput of 250 000 tonnes per month.

The next critical path is the development of the workshop excavations availing them for handover for construction. This remains critical for effective machine maintenance and the increase of primary fleet suites 9-12.

Our focus as we plan is to improve plant utilization with the aim of reducing the schedule backlog. Efforts also include increased efficiencies in team management through the use of interpersonal skills by the team leadership.

The process of procuring Diesel Reticulation has started to ensure timeous availability of diesel underground required to service the increasing demand from the load and haul fleet.

Quality is managed by expert judgement of the monitoring and control teams, employing techniques including audits and inspections, evaluations and meetings to align the execution team to the required quality. This remains pivotal for the project ensuring that deviation and re-work is eliminated, and that the developed excavation and infrastructure has endurance to survive its design life.

Thembeka Mnyedi Shaft closed the last quarter of the first year with a production of 84 000tpm. The forecast is reaching the 100 000tpm milestone within the first quarter of the second year, 140 000tpm for the second quarter, 160 000tpm for the third quarter with all plans supporting 200 000tpm in the fourth quarter.
SINTER PLANT
OUR PRIDE AND JOY

The decision to build the largest manganese ore processing plant in the world is informed by the country’s policy position to benefit from our products locally so that value is derived across the entire value chain before exporting them. Such a position promotes job creation and economic growth of the Northern Cape community.

The beneficiation process starts with our Ore Preparation plant crushing the ore to the smallest granules our crushers are capable of processing to go through our 6mm screens and then conveyed through to our sinter plant for further processing.

ORE PREP PLANT (OPP) PERFORMANCE

ROM Ore throughput to end Feb 2019 - 431 651 tons
MAIN PLANT ORE THROUGHPUT:
- 247 954 tons went through the secondary crushers.
- The bulk of material from the silo is waste which is being moved to the waste dump as it gets produced through development underground.

The OPP started hot commissioning in August 2018. All the snags picked up during commissioning were identified and a scope of work was put together for a service provider to be on-boarded to correct them. Tubular was the preferred service provider as they were the initial construction company for the OPP. They are current busy closing out all items on the snag list and will assist the team to fully hot commission the OPP for hot commissioning to be signed off.

Opportunities:
- Commissioning was started using KM own ore.
- Capacity building for owner’s team on both Engineering and Process teams.
- Skills transfer from OEM to owner’s team, e.g., SBM technician spent 3 weeks training our team.
- Generating fines to feed the Sinter Plant with own ore.

Threats:
- Prolonged commissioning due to snags that still need to be sorted out.
- Spares availability on time (only starting to understand wear rates to align with procurement).
- The balance between OPP production and Sinter operation not yet optimized resulting in Sinter plant running productivity in batches.

Our commitment to address all the snags will certainly guarantee full use of the equipment for maximum production processes.
SINTER PLANT

The sinter plant is fully commissioned. It has the capacity to treat 250 000 tons of Mn fines feed to produce about 200 000 tons of sinter per month. To date it has been running on a batch (stop-start) process at lower capacity of about 60-70% as the OPP is being commissioned. The underground operation is still under development resulting in lower feed grade. This affects quality being produced which is expected to increase to above 40% Mn once production stabilizes underground.
A DAY IN A LIFE OF A KALAGADIAN ON THE GROUND

Kalagadi is one of the few mines in South Africa that ensures women empowerment. Tumelo Mosimege is one of the direct beneficiaries of this vision. The 38 year-old lady Utility vehicle driver and a breadwinner of her house hold.

Tumelo is originally from Magojaneng, a village near Mothibistad in the Northern Cape. Her working day starts at 05:30 as she arrives at the mine for her shift. As soon as Tumelo enters the shaft her first responsibility as a utility driver is to collect the keys of the trackless mobile machine at the control room using her biometric identity.

Tumelo then proceeds to the female change house, where she changes into the required underground Personal Protective clothing. In her bag before she proceeds to get her dedicated cap lamp, she ensures that she has packed her meal for the break, water, a risk assessment document, and machine pre-start.

Tumelo and her colleagues enter the 160 person cage to proceed to underground workings between 06:00 - 06:30. As they arrive in the workings together with her colleagues, they interact on safety issues and discussions in a meeting facilitated by the Health and Safety representative.

The plan of the day is also discussed at this forum, informing Tumelo about her focus area(s) for the day.

As soon as the meeting adjourns, Tumelo goes to her Manitou to inspect it and conduct a pre-start risk assessment on it, inspecting all functionalities and safety devices. This is followed by a workplace risk assessment, with her planned task in mind, she anticipates any hazards she could come across and inspects all controls to keep her safe.

Her primary role as a UV operator is to transport the bulk material needed in the workplace and provide a working platform for team members working at heights.

At 14:30 Tumelo concludes her task for the shift, and prepares to return to surface, takes a shower and board a bus home. The bus takes her back to Magojaneng where she is united with her family. She does her homely duties and ends her day at 19:30, where she can finally reflect back on the day, and rest.

Compiled by: Tsholofelo Cynthia Mookaneng
Kalahadi Manganese mine is constituted out of three contiguous farms, namely, Umtu 281, Olive Pan 282 and Gama 283, making a total area of approximately 6 300 ha. The mine is an underground mechanised trackless board and pillar mine.

The 9th of March 2019 marked a one year milestone for our first manganese ore blast in our underground mine. This was achieved two (2) months earlier than scheduled.

The cornerstone of our operations is safety and zero harm. Since the start of the project in 2010, we proudly recorded zero fatalities over nine (9) fatality free years, giving us 20 730 436 fatality free man hours and 2 591 504 fatality free shifts, a remarkable achievement for our operations.

The recognition of Kalahadi’s safety record as the “Best Overall Underground mine” and “The best improved LTIF rate” by the Department of Mineral Resources in 2016, is testimony of the commitment of the company to its employees’ wellbeing over the years. Our lost time injury frequency rate over the last five (5) years in particular was 0.11, whilst also taking into account that we achieved a rate of zero (0.00) for two consecutive years, 2015/2016 & 2016/2017.

In August 2018, the company achieved another milestone, being awarded “The 7000 fatal free production shifts”, which the DMR awards for every 1000 fatality free shifts.

In November 2018 we achieved yet another milestone, when DMR awarded the company the “Best Overall Underground mine” and the “Best improved LTIF rate over 12 months” in the Northern Cape. In the same period, as a show of our commitment to protecting the Health & Safety of our employees, all operations were stopped for two full shifts to allow our employees to listen to among others, the Principle Inspector of the Northern Cape as a key-note speaker, sensitising all employees on the importance of protecting their Health & Safety and the environment in which we operate.

The financial year 2018/2019 saw the mine achieving 245 lost time free days with underground operations in full swing, drilling, blasting, loading and hauling, a momentous occasion for the mine.

The LTIFR (Lost time incident frequency rate) benchmark is set at 0.6 and Kalahadi has been constantly below this target for the past five (5) years with an average of 0.11. In comparison to our neighbouring competitors, we are also below their collective rate which is 0.26. These underground mines have been in business for many years with most of them having an average staff compliment of +/- 2000 employees but we outshine them with regards to protecting the Health & Safety of our employees. Much as we are a growing mine in all aspects, we have a management team with over 300 collective years of wealth of experience. We can safely say we are doing the right thing and should not stand back for anyone as we strive to uphold the prime objective of “protection of our shareholder” by protecting the Health & Safety of our employees and protecting the environment.

For quality assurance, we strive to make use of industry leaders, to ensure sustainability, hence our through legal compliance audits we are able to determine the extent of our compliance with relevant laws and regulations. The evaluation process of checking the company’s performance against legal standards and identifying areas where adherence is required, needs to be stricter.

Kalahadi Manganese Mine achieved these excellent safety records and safe production, through employing Blue Chip companies for design, construction, operations and maintenance.

Kalahadi Manganese Mine, through engagement with industry leaders are satisfied with the Suitability of the five (5) strategic Pillars of the company.
HUMAN RESOURCES
SERVES “OUR PEOPLE”

Human resources has been at the crux of production in 2018 here at Kalagadi. Critical to our success and the realisation of profitability is our most important asset, “Our people”. In on-boarding the new recruits, the company invested in an intense induction and training programme to ensure employee readiness across the production value chain. The training programme covers mandatory/technical training, Employee competency development, Further development and a Social and Labour related plan i.e. learnerships. Such employee training is informed by the individual development plans (IDP). Among other training initiatives is legal compliance training, skills development, pipeline development and bursaries to enhance employee performance in their area of responsibility.

With the strategic decision taken by Kalagadi to contract underground mining, the contracting of Murray and Roberts Cementation (MRC) for the underground mining functions resulted in them being tasked with the recruitment of the personnel that will work in their area of responsibility, whilst Kalagadi’s responsibility remains that of resourcing the administrative and support functions, the Ore Preparation and the Sinter plants for beneficiation and importantly, the monitoring and oversight of MRC to meet their contractual obligations. The recruitment drive resulted in the staff compliment for the contractor and Kalagadi standing at 460 and 290 respectively during the ramp up phase. At steady state the staff compliment is envisaged to be at 1300 collectively. To date our operations have taken the economic development imperatives into account as noted by the 274 employees sourced from local communities for employment.

To the extent possible we have a wellness policy that employees can access to ensure that their state of being is known and monitored and where necessary remedial action is implemented to ascertain their physical, occupational, spiritual, social and intellectual wellness.

Our plan going forward will focus on the review of our People Strategy, the Remunerations policy in support of the business corporate strategy that is currently under review. As an internal service provider, the Human Resources department endeavours to provide its internal clients i.e. all departments with a prompt impeccable quality service, at improved turnaround times from the time of request to deliver of service. We regard our clients as the reason for our existence and we treasure each and every employee immensely.