



# Mineral Deposits



## BUSINESS REVIEW 2011



The 2011 financial year was highly transformational for the Company and was very much a year of two distinct halves. The dominant undertaking in the first half saw us demerge the Sabodala gold operation. In the second half, we focussed on underpinning the long-term robustness of the Grande Côte Mineral Sands Project. This culminated in MDL entering into a joint venture with Eramet SA and carrying out a A\$137 million equity raising to ensure funding for the project's development is firmly in place.

### Sabodala gold demerger

During 2010 it was determined that the interests of shareholders would be best served by separating Sabodala and Grande Côte into two separate companies, allowing shareholders to have direct ownership of both a pure West African gold producer with exciting growth prospects, and Grande Côte, a mineral sands project with the potential to be a Tier One asset. This was ultimately achieved in December 2010 through the demerger of Sabodala into Teranga Gold Corporation ("Teranga"), a new Canadian-incorporated company listed on the TSX and ASX and run by a completely separate board of directors and management team.

The demerger involved the entities and assets associated with Sabodala being transferred to Teranga in exchange for 200 million shares in Teranga and C\$50 million cash. 160 million of the Teranga shares were then distributed to MDL shareholders on a proportional basis and MDL retained 40 million (approximately 16% of Teranga's issued shares).

### Grande Côte focus

With the demerger of Sabodala concluded, the 2011 new year saw us completely focussed on the development of Grande Côte. As the year progressed, the momentum behind the development increased such that, by the end of September, year to date expenditure was nearly US\$60 million.

After an approximate two year build, production from the project is anticipated to commence late-2013. Once in full production, expected average annual output is about 85,000 tonnes of zircon (equivalent to approximately 7% of global supply) and around 575,000 tonnes of ilmenite, with additional quantities of rutile and leucoxene.

### Creation of TiZir

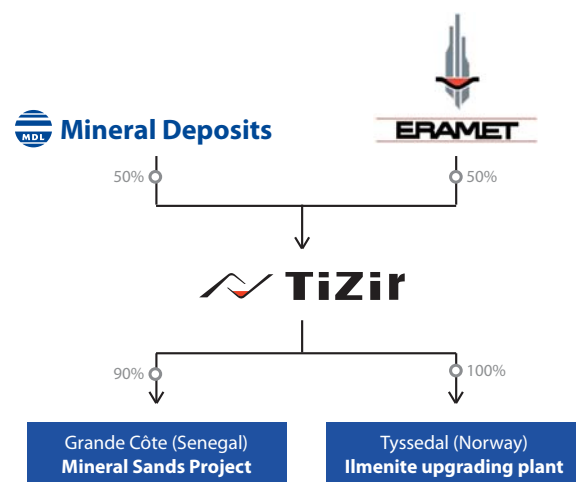
As part of our effort to put in place the foundations to provide for the long-term future of Grande Côte, extensive discussions were held with potential off-take customers for the project's products (with a particular focus on the ilmenite) and, most importantly, significant effort went into determining the best way to finance the project. The latter included working with a syndicate of Development Finance Institutions and Export Credit Agencies towards the potential establishment of a project financing facility.

In the end, one proposal and course of action well and truly stood out above the rest – the entering into a joint venture with Eramet SA, whereby MDL and Eramet each owns 50% of a newly created entity, TiZir Limited ("TiZir"), and have equal rights in relation to the company's operation.

With effect from 1 October 2011, we contribute to TiZir our 90% interest in Grande Côte (with the balance held by the Republic of Senegal), while Eramet contributes:

- its 100% interest in an ilmenite upgrading plant in Tysseidal, Norway;
- US\$30 million cash; and
- additional cash to match our funding of Grande Côte since the start of 2011.

Eramet will also provide a US\$45 million unsecured loan to TiZir in the future.



Eramet is a French-based mining and metallurgical group listed on the Euronext Paris with a market capitalisation of approximately €3 billion. The Group employs approximately 14,000 people in 20 countries and is a leading global producer of alloying metals, particularly manganese and nickel, and high-performance specialty steels and alloys.

An exceptionally strong working relationship has already been established with a number of Eramet personnel.

## Tyssedal ilmenite upgrading plant

The Tyssedal, Norway ilmenite upgrading plant is one of only five such facilities in the world and the only one in Europe.

Ilmenite, containing on average 50% titanium dioxide (or  $\text{TiO}_2$ ), accounts for approximately 90% of titanium feedstock supply, which is primarily used to make pigment for paints, plastic and paper. However, more than 40% of ilmenite is first upgraded at facilities such as Tyssedal to titanium slag with a  $\text{TiO}_2$  content of at least 80% before being used as feedstock by pigment producers. The primary reason for upgrading is because pigment producers want high  $\text{TiO}_2$  content within their feedstock as it reduces waste output, with many having severe waste limitations due to regulatory constraints and environmental issues.

The Tyssedal plant smelts ilmenite to produce a titanium slag with a  $\text{TiO}_2$  content of approximately 80%, having separated out the iron to produce a high purity pig iron which is sold as a valuable co-product to ductile iron foundries for various uses, but particularly for the production of wind turbine parts. The facility currently produces approximately 200,000 tonnes per annum of titanium slag and in the order of 110,000 tonnes per annum of high purity pig iron.

The location of the plant provides access to hydro power and, being positioned on the edge of the Hardanger fjord, all ship handling occurs on site.

## Strategic rationale of combining Grande Côte and the Tyssedal plant

Combining Grande Côte and the Tyssedal plant within the one entity creates a vertically integrated player in the titanium feedstock sector. Specifically, it:

- secures off-take for the majority of Grande Côte's ilmenite and provides a substantially stronger route to market for the ilmenite than if it were sold directly as a feedstock in its raw form to pigment producers; and
- provides long-term security of supply of ilmenite for the Tyssedal plant, which provides the opportunity to build a second furnace, thereby doubling the capacity, and the capability to produce feedstock for both the sulphate and chloride process routes for making pigment.

TiZir itself will also benefit from Eramet's broad expertise in mining, metallurgy, logistics, R&D and marketing, and from MDL's development expertise and mineral sands mining experience.



## Grande Côte development

In June 2011, the estimated capital cost for development of Grande Côte was revised to US\$516 million. A major contributor to the increase from the US\$406 million estimated as part of the Definitive Feasibility Study ("DFS") in early 2010 was our decision to implement a strategy of logistics self-sufficiency rather than utilise third party infrastructure as proposed under the DFS. Key components of this strategy are:

- the granting of a 25-year concession by the Government of Senegal for use of an existing rail line which, when upgraded and connected by a planned new 22 kilometre rail spur from the mineral separation plant, will allow for the rail of all products to the Dakar port; and
- entering into a 25-year lease over a large area of land at the Dakar port for bulk storage and use of a mole for ship loading.

Other significant achievements for the project during the year were:

- contract sign-off with Unithai Shipyard for fabrication of the Project's dredge – a works package being managed by Ausenco – with the offsite build and commissioning expected to be completed by the third quarter of 2012, ready for delivery to site and reassembly;
- execution of a Letter of Intent, which is in the process of being formalised to an EPCM contract, with SNC Lavalin for the floating (wet) concentrator, mineral separation plant and associated site infrastructure;
- contract sign-off with Wartsila for the build of a 36MW tri-fuel (HFO, diesel and gas) power station – with completion due at the end of the first quarter 2013;
- agreement on land compensation rates and amounts, with compensation having already been distributed for certain sites and thereby allowing commencement of earthworks on those sites; and
- establishment of the owner's construction team.





## Grande Côte Funding

The development of Grande Côte will be funded within TiZir. After allowing for the initial US\$30 million cash injection into TiZir by Eramet, a US\$45 million loan from Eramet and a proposed external debt facility of approximately US\$150 million, it is anticipated that equity funding of some US\$150 million will be required from each of MDL and Eramet to fund the estimated capital cost of US\$516 million.

With cash at 30 June 2011 of more than US\$170 million, combined with the Teranga shareholding worth approximately US\$80 million, more than sufficient funding exists for the anticipated US\$150 million equity contribution from us.

## Overview of the mineral sands sector

Prices for both zircon and titanium feedstocks have increased strongly over the past year, largely a function of supply side tightness and increasing competition for consumers to secure feedstock. After exiting 2010 a little over US\$1,000 per tonne, the price of zircon has risen over the course of 2011 such that pricing of approximately US\$2,500 per tonne is expected in the final quarter. Similarly, prices for titanium feedstocks have more than doubled from 2010 to 2011. The pricing power has very much shifted from the customers to the ore producers.

The demand for zircon is largely driven by the ceramics sector (principally for tiles), with China's urbanisation the growth engine, while pigment production (which is mainly used in paint, plastics and paper) is the dominant use for titanium feedstock. TZMI, the sector's leading consultant, is forecasting in the order of 4% compound annual growth in demand for both product streams for the foreseeable future.

On other hand, supply is expected to remain constrained, leading to increased supply deficits. Production from new projects such as Grande Côte is not expected to offset the decline in production from existing projects.

## Outlook

2012 will be a year in which a significant part of the Grande Côte build will occur (before being finished in 2013), and the Tyssedal ilmenite upgrading plant will enjoy a considerable price increase for its titanium slag relative to 2011, thereby substantially increasing its profitability.

Once Grande Côte reaches its expected average annual production, TiZir will be producing approximately 7% of both global zircon and titanium feedstock supply. Grande Côte is one of only a few major new projects under development that is poised to take advantage of the supply-constrained mineral sands sector.

## People

The safety of our employees, our business partners and the communities in which we work is paramount to the way we operate. Our philosophy is that all work-related injuries, diseases and property losses are preventable and we are continually implementing programmes and strategies to that end.

We are also constantly striving to improve the security, welfare and prosperity of the communities which surround our mining and processing activities, and aiming to maximise the many positive impacts and minimise any negative impacts of our operations.

