



Tivani Project Presentation

May 2024

FERROX
Ferrox Holdings

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This presentation uses the terms “Measured”, “Indicated” and “Inferred” Resources as defined in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects. United States readers are advised that while such terms are recognized and required by Canadian securities laws, the United States Securities and Exchange Commission does not recognize them. Under United States standards, mineralization may not be classified as a “Reserve” unless the determination has been made that the mineralization could be economically and legally produced or extracted at the time the reserve calculation is made. United States readers are cautioned not to assume that all or any part of the mineral deposits in these categories will ever be converted into reserves. In addition, “Inferred Resources” have a great amount of uncertainty as to their existence, and as to their economic and legal feasibility. It cannot be assumed that all or any part of an Inferred Resource will ever be upgraded to a higher category. United States readers are also cautioned not to assume that all or any part of an Inferred Resource exists, or is economically or legally mineable.

01

Ferrox Overview

Ferrox Holdings Overview

- Incorporated in 2006, Ferrox Holdings Ltd. (“Ferrox”) is a British Virgin Island (“BVI”) company currently developing the mining and production of titanium, iron and vanadium products, through its world-class titanium ilmenite ore mining deposits in South Africa.
- Ferrox owns the Tivani Mining Deposit (“Tivani Deposit” or the “Deposit”, “Tivani Project”), its flagship asset with significant existing work and development done to-date, located in the mining-friendly Limpopo Province of South Africa.
- The Tivani Project is favourably located in an area well known for its mining and smelting operations, and is 338 km from Johannesburg, 371 km from the nearest deep water port, which is in Maputo (Mozambique).
- Extensive preparation work and studies have been done by the Ferrox team, with over USD 65 million of already invested in the development work of the asset, including on the geology, mine planning, mineral processing alternatives, potential product sales, corporate social responsibility with the local communities and the legal licensing aspects in a South Africa context.



Products

Titanium Products



Ilmenite
Concentrate



Titanium
Metal



Titanium
Dioxide



Ferro
Titanium

Vanadium Products



Vanadium
Pentoxide



Ferro
Vanadium

Iron Products



Magnetite
Concentrate



Pig Iron
(Brazilian Grade)



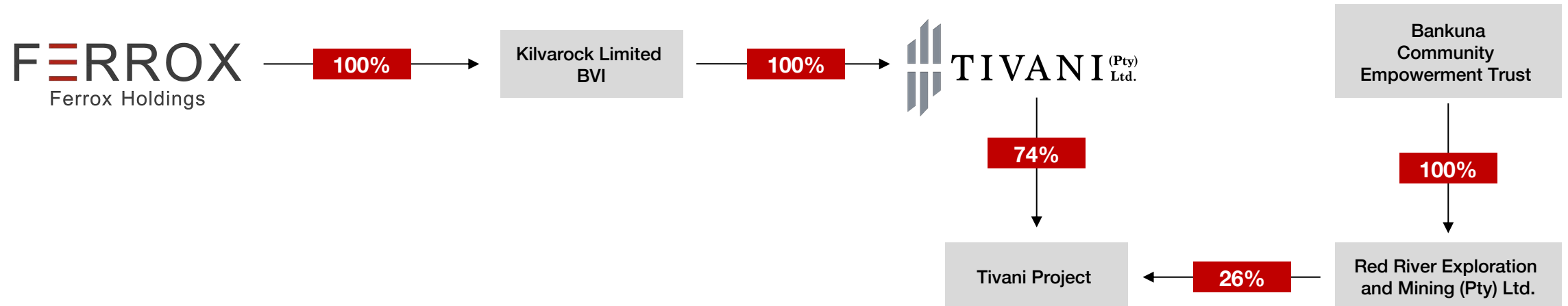
Other Mineral Product:
Phosphate

Simplified Corporate Structure

Authorized Shares: Unlimited

Issued & Outstanding: 1,500,000,000 Common shares

Auditors: PJP & Associates



Technical Studies and due diligence materials

Report / Study / Testing	Consultant / Specialist Firm	Year Completed	Reflected in Current Business Plan
Tivani Rooiwater Project Technical Due Diligence	Minxcon	2016 & 2015	Yes
Management Financial and Business Model	Ferrox Internal Team	2016	Yes
Updated Metallurgical Testing	Ferrox – Daniel Dutton	2017 (ex. In July)	To be reflected
Third Party Legal Due Diligence Report	Hogan Lovell	2015	Yes
NI 43-101 Mineral Resource	Obsidian Consulting	2011	Yes
Mintek Report Clarification re Metallurgy	Mintek	2013	Yes
Testing of Ferrox Ore	Universal Titanium	2013	Yes
Water Use Activities: Tivani	WSM Leshika Consulting (Pty) Ltd	2013	Yes
DC Arc Smelting of Titaniferous Magnetite for Tivani	Mintek	2009	Yes
Mintek Metallurgical Testing	Mintek	2007	Yes
Note on the Resources of Tivani Sands	Obsidian Consulting	2013	Yes
Tivani Project Concept Study	HSBC	2013	Changes made
Pre-feasibility Study	Flour Daniel	1997	Changes made
Prelim Benefication Testing, Minerology	Associated Mining Consultants (Canada)	1997	Changes Made

02

Titanium, Vanadium,
Iron Products
& Markets

Titanium market continues to grow

Titanium dioxide and titanium are both widely used materials, with applications spanning over a broad spectrum of industries

TiO₂ – typical applications



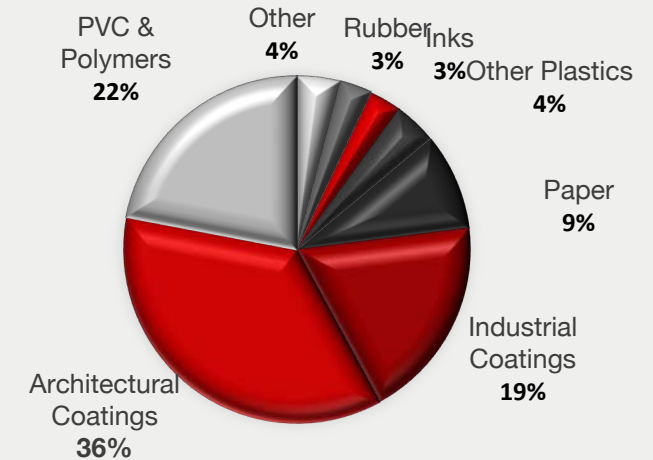
Global Market Size = USD 20 billion

Titanium Dioxide market continues to grow

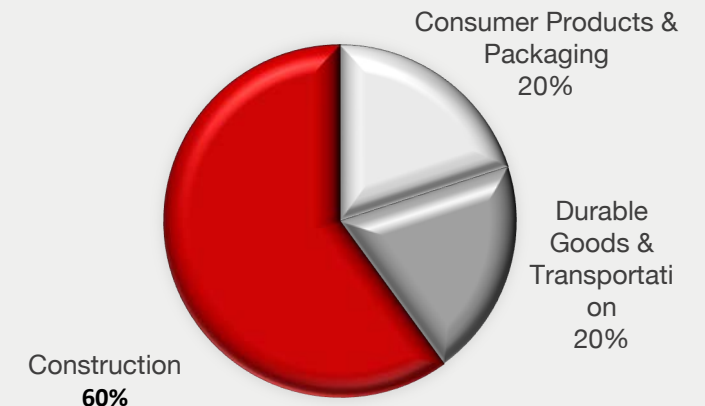
- The top five TiO₂ producers make up roughly 40% of the global market: Chemours (spin-out from DuPont) Cristal, Huntsman, Tronox and Kronox.
- China probably represents about 40% of global capacity, or about 4.5 million metric tonne.
- Global TiO₂ capacity has grown 7% per year on average for the past five years from 7 million metric tonnes to 8.6 million metric tons and demand has probably been growing at rates closer to GDP growth.
- Demand growth has historically averaged 3% and emerging markets represent 70-80% of annual growth. The global TiO₂ market represents sales of about USD 20 billion, with paints and coatings accounting for about 50% of demand.
- The TiO₂ customer base has consolidated. According to DuPont, the top 10 coating customers represent roughly 50% of global demand.

Source: Morgan Stanley, CEH (April 2016)

World Consumption of TiO₂ by **End Use**



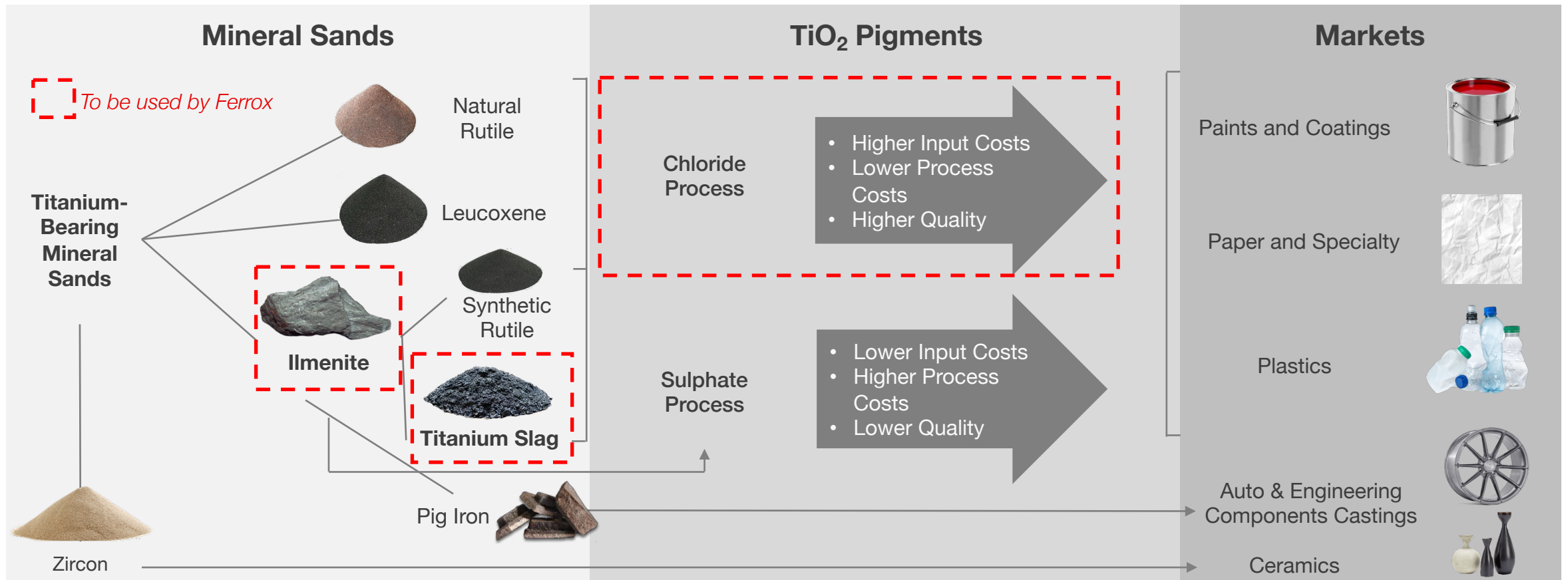
World Consumption of TiO₂ by **Industry**



Ferrox expects to use chloride-based technology

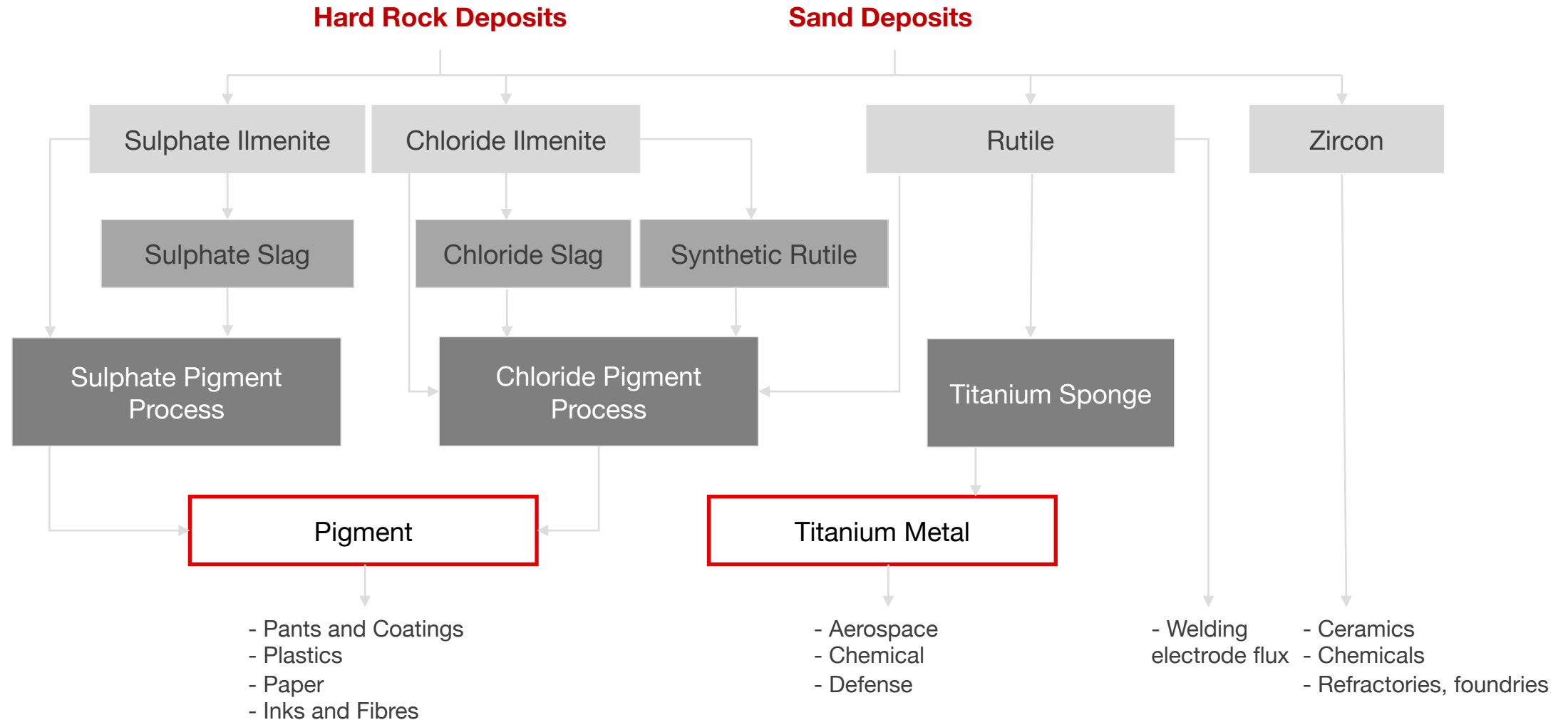
- Two routes to produce TiO_2 are chloride-based technology and sulphate based technology. The chloride based technology produces a higher-quality TiO_2 with less waste than sulphate based process.
- Chloride-based technology is not “off the shelf” but propriety. There are a handful of companies with chloride-based titanium dioxide technology.

TiO₂ Market and Processing Routes



Titanium Products – from mining to industrial end markets

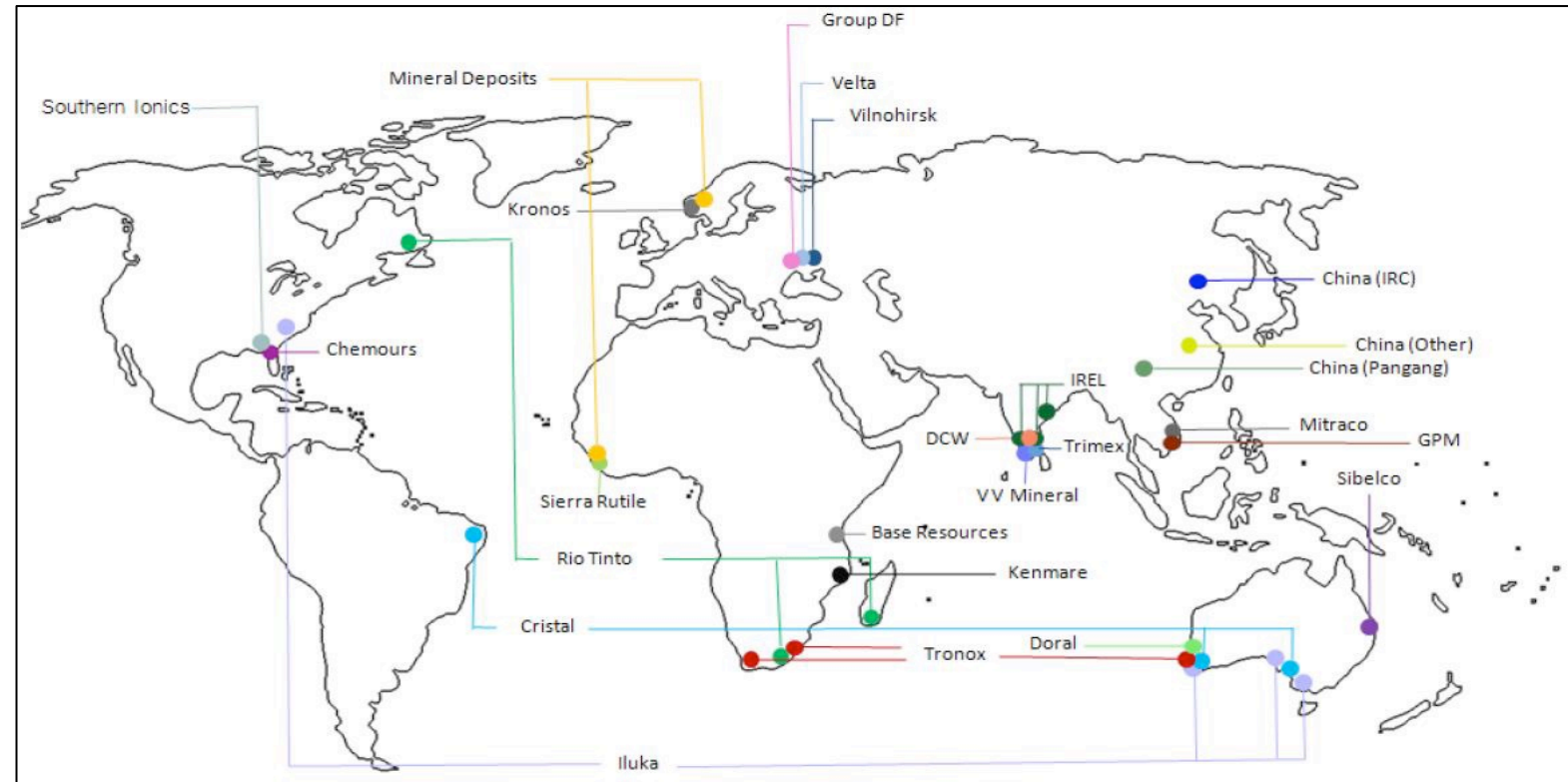
Titanium Mining to End Product Flow Diagram



Map of Global Feedstock Production

Global TiO₂ feedstock producers / mine location

- Two routes to produce TiO₂ are chloride-based technology and sulphate based technology. The chloride based technology produces a higher-quality TiO₂ with less waste than sulphate based process.
- Feedstock types include: natural rutile, synthetic rutile, chlorinatable ilmenite, sulfatable ilmenite, CP slag and SP slag.

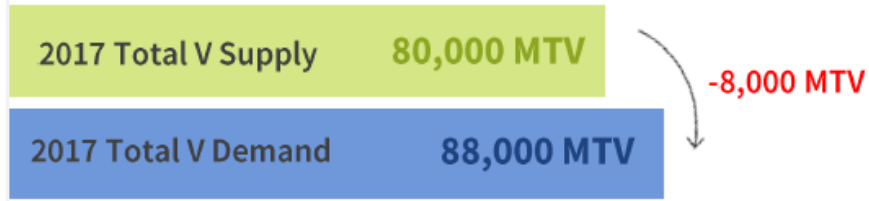


Vanadium: Commodity we cannot live without

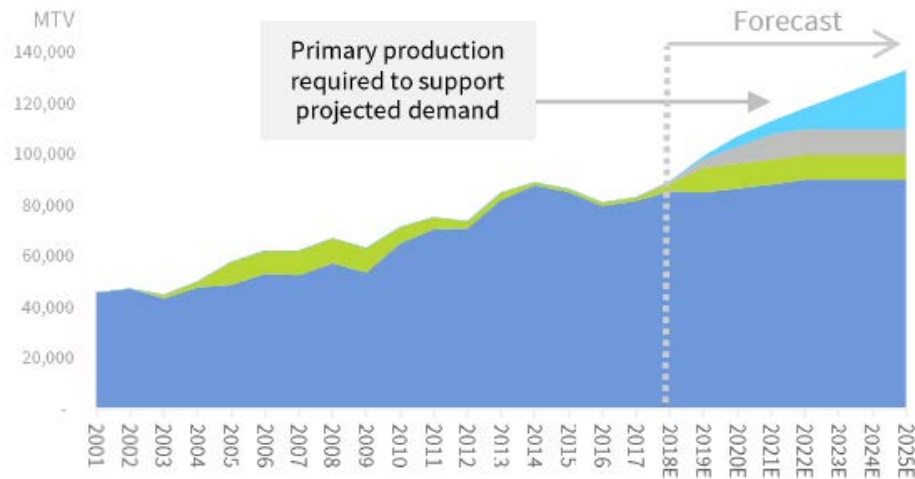


World vanadium consumption has grown at a CAGR of 7.1% from 2001 to 2014

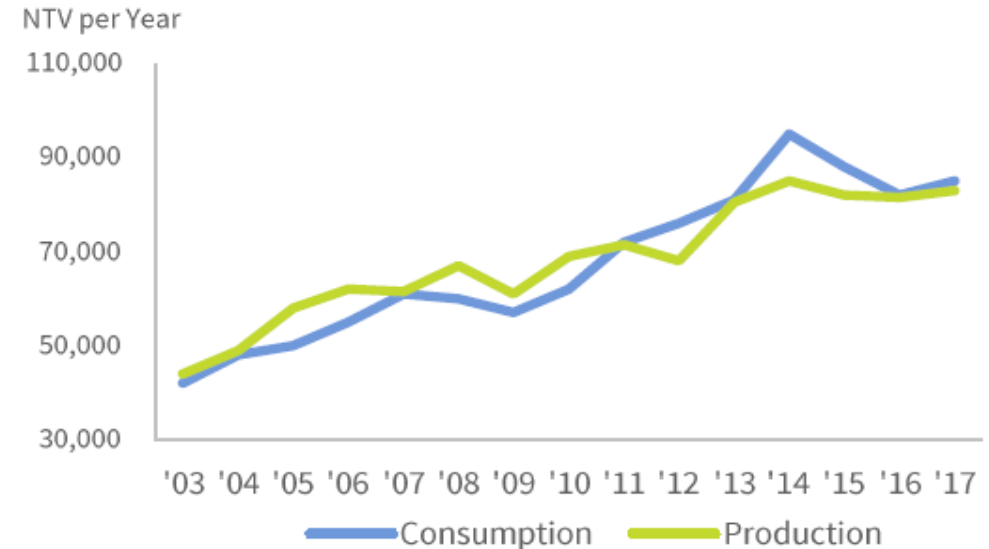
Shortage of V in global supply



Global Vanadium Production Forecast



Historical Global Vanadium Production & Consumption



Vanadium Production & Consumption

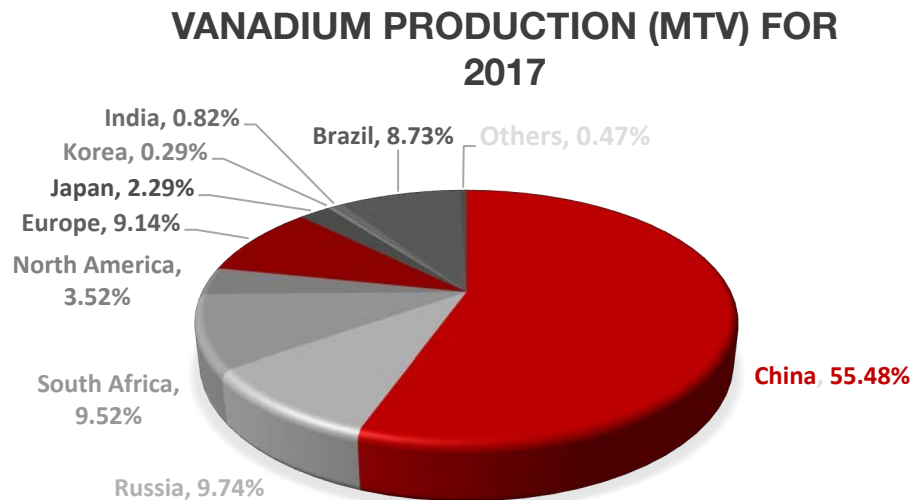
Global Adoption of vanadium redox battery (VRB)

- 60 MWh VRB by Sumitomo live in 2016.
- 800 MWh VRB by Rongke (China) under construction.
- Hundreds of VRB systems worldwide.

VRB: Not flammable, long Discharge (8hr), long life (20years+), holds charge for long periods.

Wind and solar power: 100GW in 2011 to 700GW in 2016. Total grid storage poised to grow from 3GW to 100GW by 2030.

Source: Bloomberg



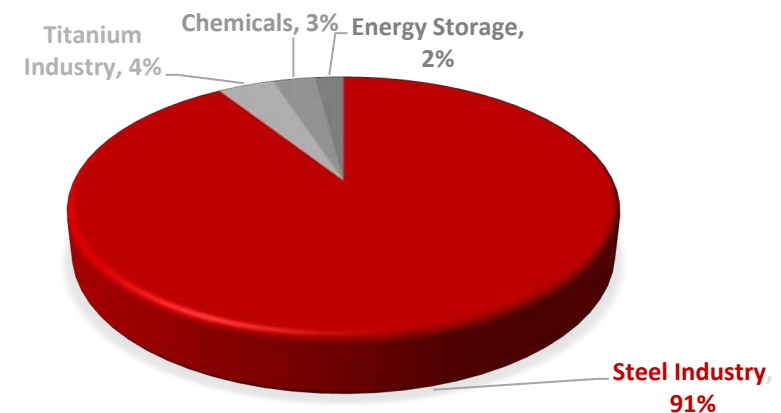
Source: Vanitec & TTP Squared

Gov't requirement in traditional steel re-bars 0.05% vanadium doubles steel strength

Vanadium alloy re-enforcement steel bars are required for skyscrapers to fend off earthquakes and floods.

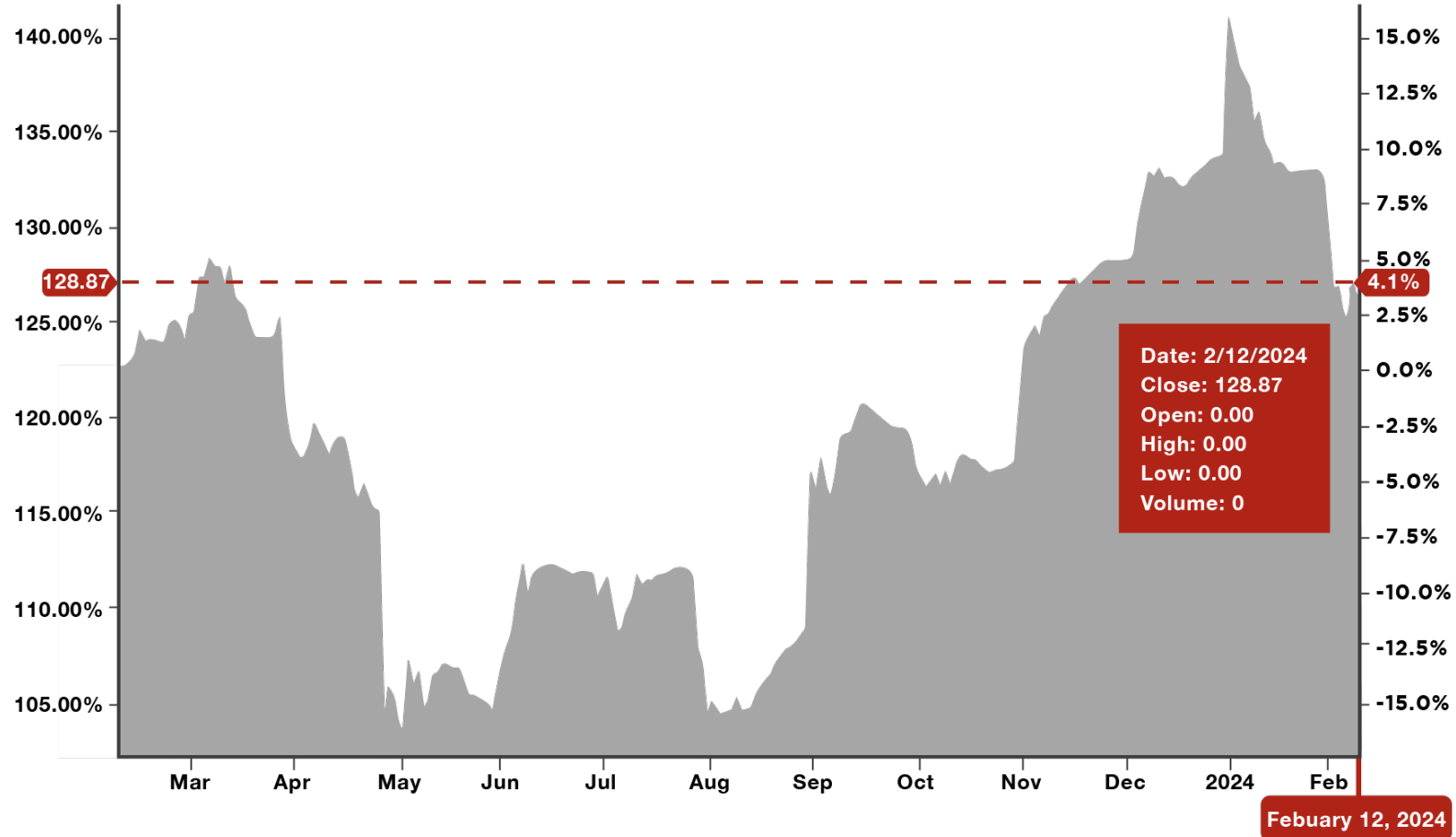
China upgraded their rebar standards with more vanadium in 2017
North America and Europe: 1.0kg V per tonne of steel (0.1%)
China: 0.6kg V per tonne of steel (upgraded from 0.3kg V per tonne of steel) as of November 2018.

WORLD VANADIUM CONSUMPTION BY APPLICATION 2017



Iron Ore 62% Fe, Spot Price

Iron Ore Spot Price February 12, 2024
US\$128.87/tonne



Vanadium: One of the best performing commodities

Vanadium Pentoxide Flake 98%
Europe: US\$ 11.10/lb
or US\$ 24,476/tonne

Europe : US\$11.10/lb (0.00%)
May 4, 2022



Ferro Vanadium 80%
Europe: US\$ 45.25/kg
or US\$ 45,250/tonne

Europe : US\$45.25/kg (0.00%)
May 4, 2022

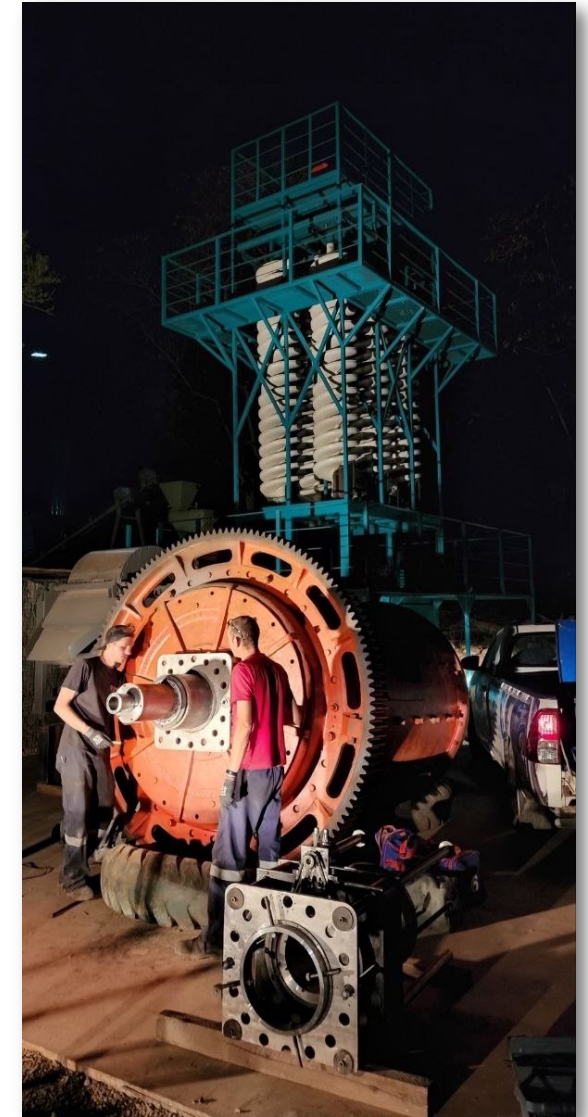
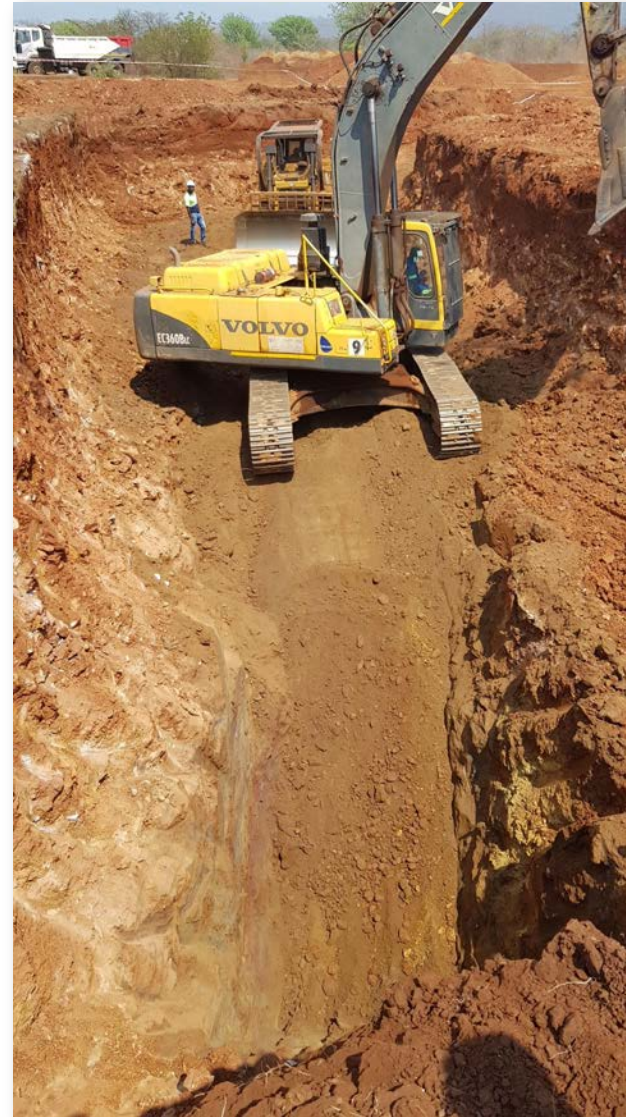


03

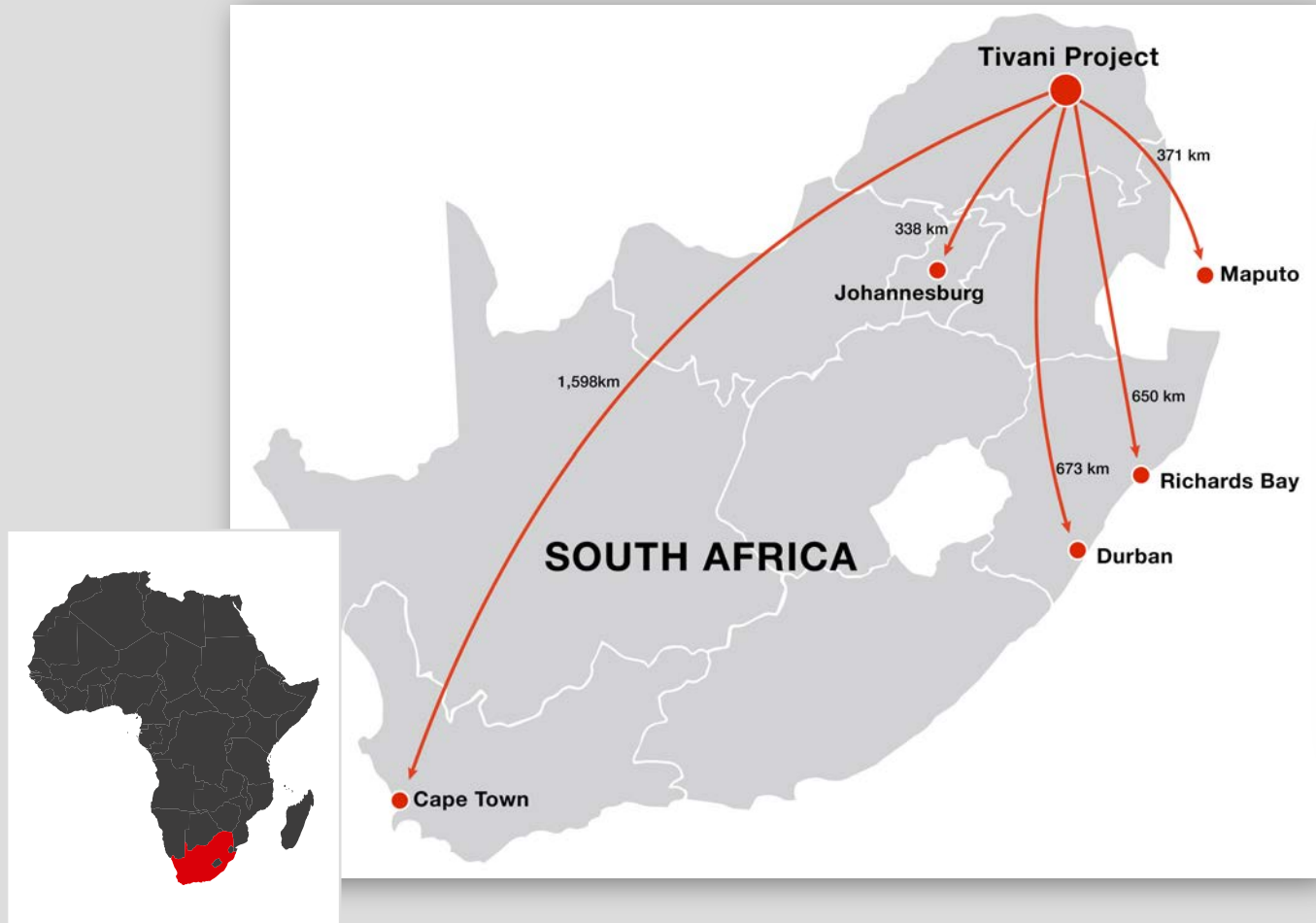
Tivani Project &
Operations

Project Overview

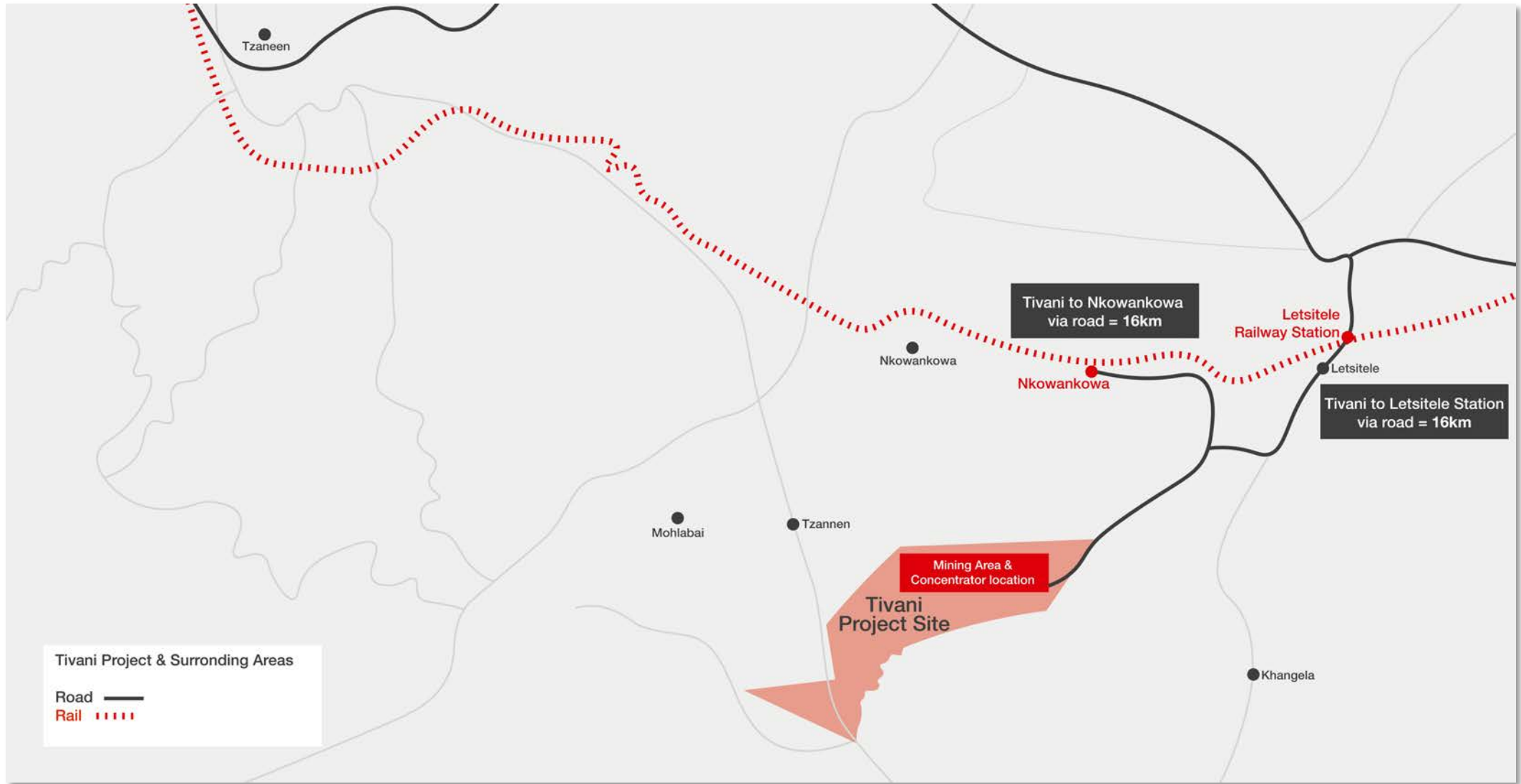
- World class titanium project with large iron, vanadium and phosphate opportunities in Limpopo, South Africa
- Mining Right received from the Department of Mineral Resources of South Africa on December 11, 2013
- Large existing mineral ore body with NI 43-101 compliant resource of 471 million tonnes of titaniferous magnetite over the Tivani Project (13 square km)
- Drilled 420 holes totaling 31,523 meters of stored core
- Existing road, rail and port infrastructure, water resources, and available power grid to support near term and long term mine plans. Power will be supported by backup generators
- Up-to US\$70 million spent to-date and recognized on the balance sheet as “exploration expenditure” under non-current assets



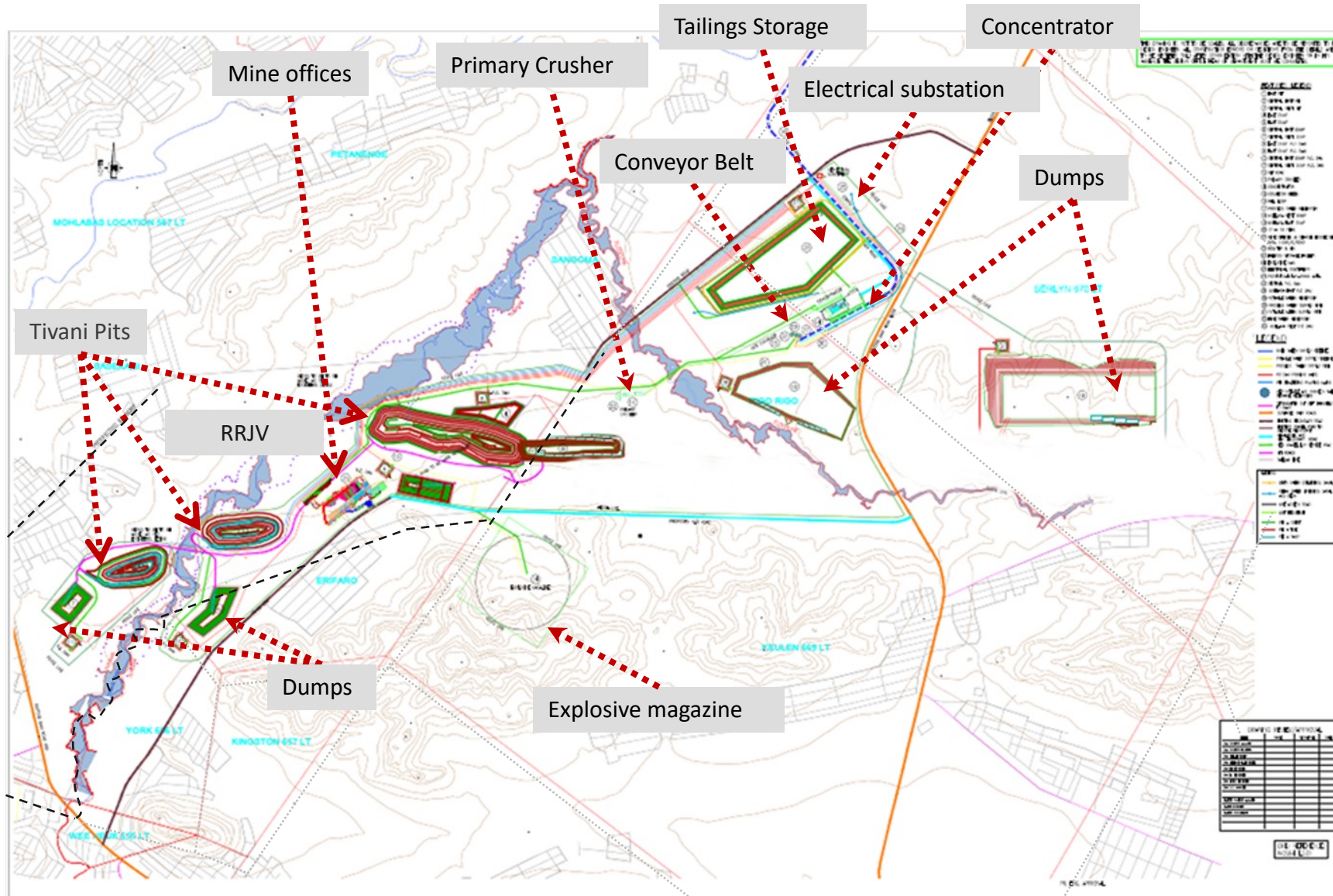
Location



Tivani Project Area

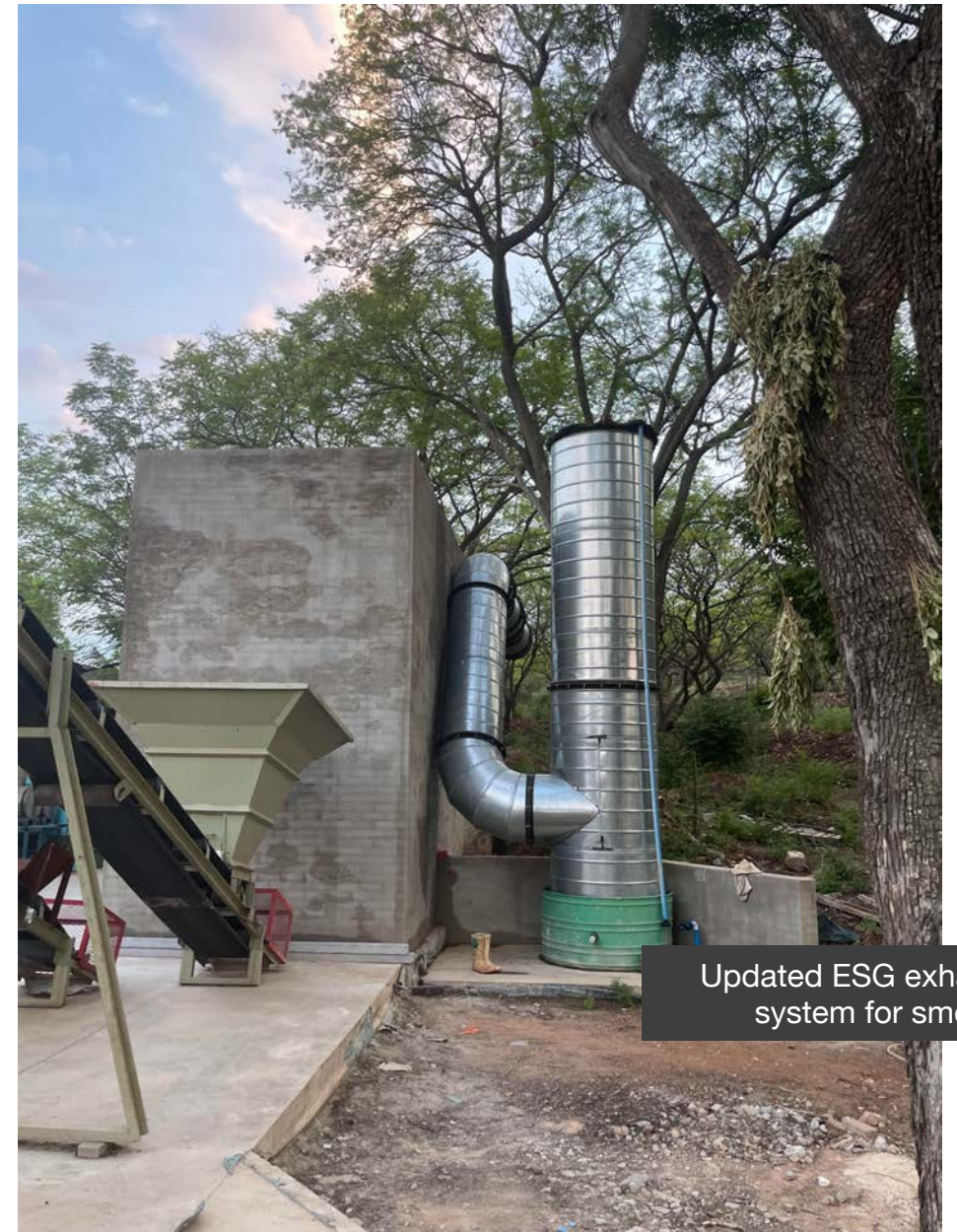


Long term mine plan layout



Mining Strategy Outline

- Ferrox plans to extract ore from surface operations utilising the services of a mining contractor for the mining operations.
- Ferrox's operational team has already been in advanced discussions with various local mining contractors.
- The mining method considered for the Project is conventional open pit mining using truck and excavator combinations.
- This is a conservative mining method which well-established with a proven track record in similar operations. The picture to the right is an example of an open pit truck and excavator operation.
- The weathered material, approximately 25 m to 40 m deep, will not require blasting and will be removed by an excavator and loaded into haul trucks.
- The fresh rock will require blasting. Drill rigs will be used to drill blast holes to be charged with explosives and blasted.
- The blasted material will then be removed by an excavator and loaded into haul trucks.
- Ore will be transported to the processing facility and waste will be transported to wasted rock dumps.
- Pit optimization model has been performed and the results are used to develop the production schedule and mine plan.
- The production scheduling was phased to maintain a lower stripping ratio for as long as possible by extracting ore along the strike of the orebodies before deepening the pits.



Updated ESG exhaust system for smelter

Tivani Mining Resources

- Ferrox has extensive drill hole data, lithological and structural data for the third-party statement of mineral resources.
- The resource statement for Tivani has been completed by Obsidian Consulting, under the Canadian Standards of Disclosure for Mineral Projects, National Instrument 43-101 codes (“NI 43-101”).
- The NI 43-101 guidelines and standards for disclosures for mineral resource reporting are recognized and accepted by the various major stock exchanges and institutional investors around the world with strong energy and mining influences, such as the Toronto Stock Exchange, the Johannesburg Stock Exchange, the Australian Securities Exchange and the London Stock Exchange.
- The estimation of the mineral resource for Tivani includes multiple mineralised seams, from M5 to M12 as well as D5 to D10.
- The economic portion to a depth of 150 m (may vary depending on depth selected) equates to approximately 5.80% of the total mineral resource of Tivani.
- At the cornerstones of NI 43-101 are the following four fundamental principles (*Source: Stikeman and Elliot*)
 - All scientific and technical disclosure (including reserve and resource information) concerning a mineral project on a property material to the reporting company must be prepared by or under the supervision of a qualified person or "QP";
 - All disclosure of the quantity and/or grade of a mineral deposit must be reported only within the prescribed five categories of "mineral reserves" and "mineral resources" (proven reserves, probable reserves, measured resources, indicated resources and inferred resources) and as set out in NI 43-101;
 - A technical report (sometimes required to be prepared by an independent QP), prepared as set out in Form 43-101F1, in certain circumstances must be filed to support scientific or technical mineral disclosure in respect of a mineral project on a property material to the company; and
 - Other scientific and technical mineral disclosure is restricted.

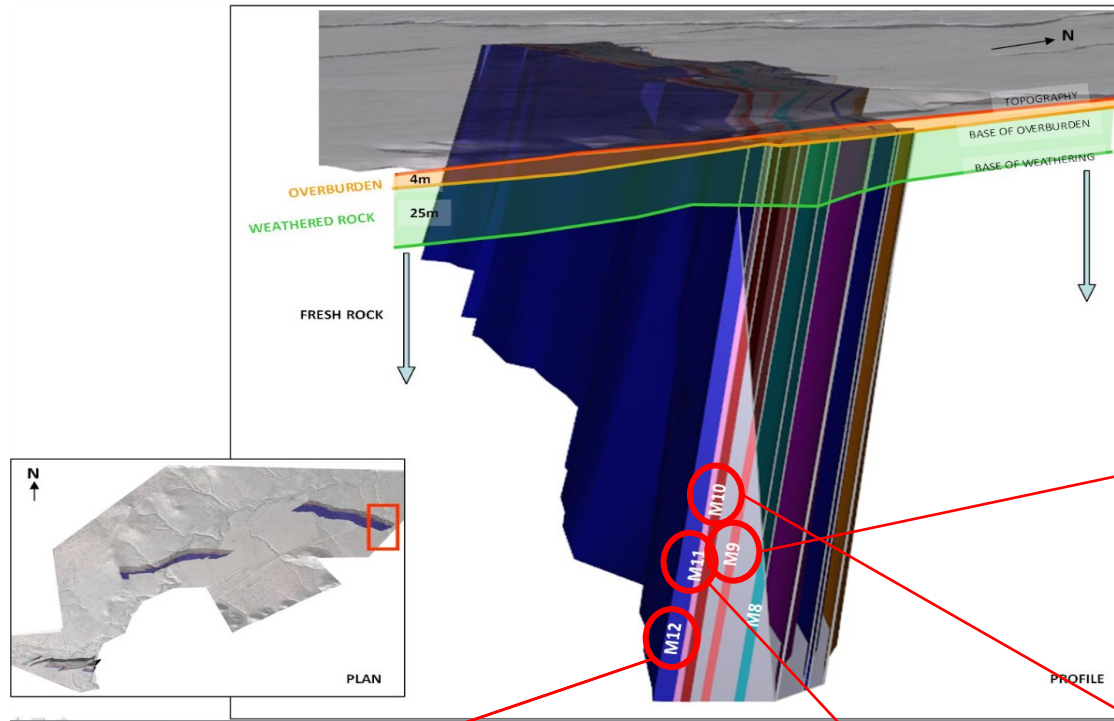
Tivani Project NI 43-101 Resource Statement

Obsidian Consulting Services: Tivani NI 43 101 Resource Statement

Resource Classification	Tonnage (Mt)	Titanium Dioxide (% TiO ₂)	Iron (% Fe)	Iron Oxide (% Fe ₂ O ₃)	Vanadium Pentoxide (% V ₂ O ₅)	Phosphate (% P ₂ O ₅)	Silicon Dioxide (% SiO ₂)
Measured – Eastern Zone	56.1	9.5%	23.5%	33.6%	0.2%	1.1%	29.9%
Measured – Central Zone	64.6	10.8%	25.2%	36.1%	0.3%	1.2%	28.1%
Indicated – Eastern Zone	60.2	9.3%	23.4%	33.5%	0.2%	1.1%	29.9%
Indicated – Central Zone	59.1	11.0%	25.5%	36.4%	0.3%	1.3%	27.4%
Total Measured & Indicated	240.0	10.2%	24.4%	34.9%	0.3%	1.2%	28.8%
Inferred – Eastern Zone	31.9	9.4%	23.9%	34.1%	0.3%	0.9%	29.7%
Inferred – Central Zone	92.5	6.8%	20.1%	28.8%	0.3%	0.6%	34.7%
Inferred – Western Zone	106.4	11.2%	25.4%	36.3%	0.3%	1.5%	26.6%
Total Inferred	230.8	9.2%	23.1%	33.0%	0.3%	1.1%	30.3%

**Extension Properties are extra to Tivani,
and could provide 3x increase in the resource base**

Tivani - NI 43-101 TiO₂ Seams – M9 & M10 are high grade



Legend	
Fe	Iron
TiO ₂	Titanium dioxide
V ₂ O ₅	Vanadium pentoxide
P ₂ O ₅	Phosphate

Thickness: M9 (3.84m) Higher TiO ₂				
Resource	Tonnage (Mt)	Fe	TiO ₂	V ₂ O ₅
M&I	14.2	46.2%	21.6%	0.7%
Inferred	9.3	45.0%	21.4%	0.6%
Total	23.5	45.7%	21.5%	0.6%

Thickness: M12 (8.79m) Lower TiO ₂				
	Tonnage (Mt)	Fe (%)	TiO ₂ (%)	V ₂ O ₅ (%)
M&I	23.1	18.6%	9.5%	0.1%
Inferred	23.9	18.8%	10.1%	0.1%
Total	47.0	18.7%	9.8%	0.1%

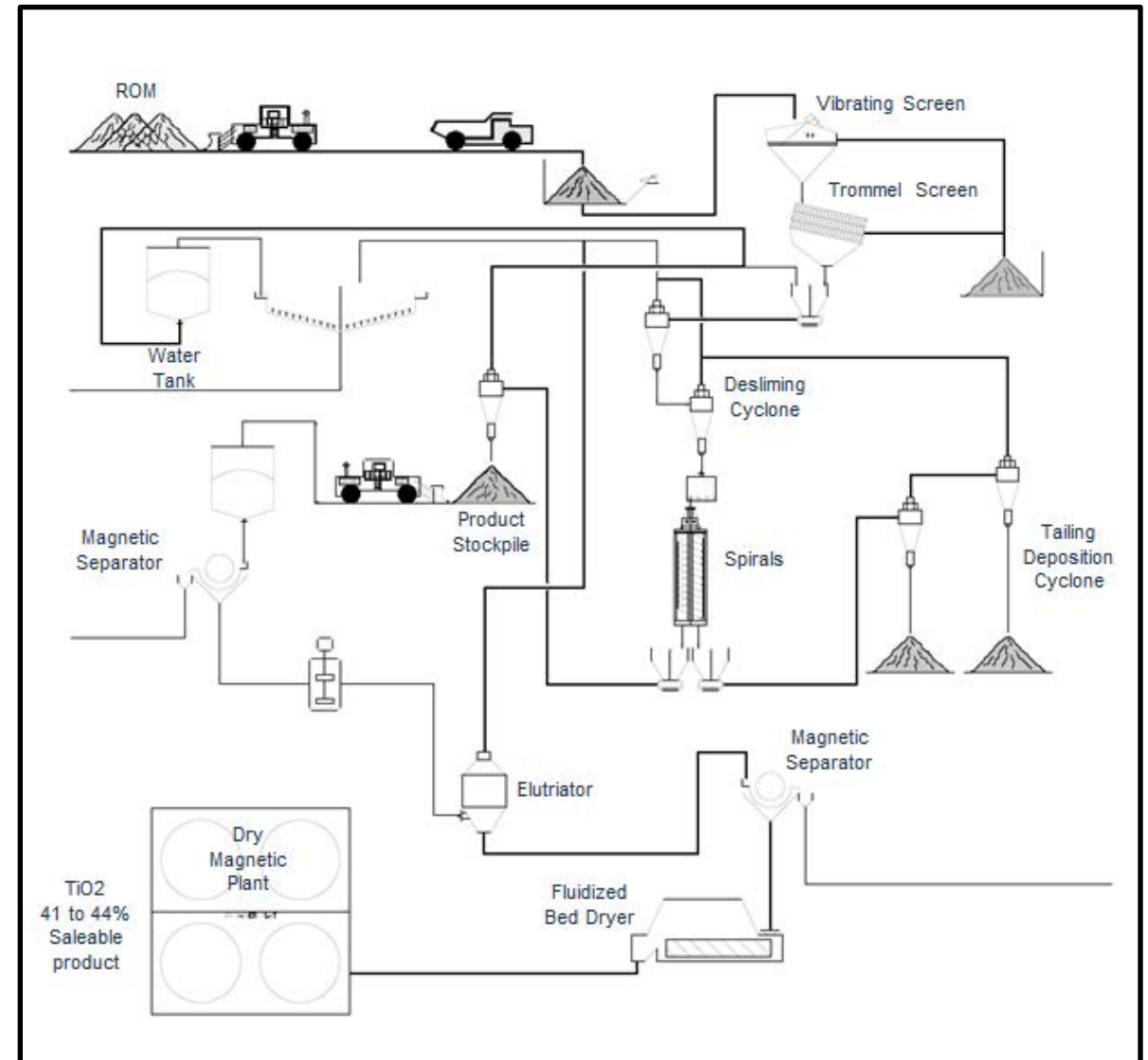
Thickness: M11 (5.18m) Medium TiO ₂				
	Tonnage (Mt)	Fe (%)	TiO ₂ (%)	V ₂ O ₅ (%)
M&I	16.3	31.1%	15.6%	0.2%
Inferred	9.2	30.3%	16.2%	0.2%
Total	25.5	30.8%	15.9%	0.2%

Thickness: M10 (8.83m) Higher TiO ₂				
	Tonnage (Mt)	Fe (%)	TiO ₂ (%)	V ₂ O ₅ (%)
M&I	31.6	43.5%	23.4%	0.5%
Inferred	22.9	43.4%	24.5%	0.4%
Total	54.5	43.5%	23.9%	0.5%

Source: Obsidian Consulting Services Tivani NI 43-101 March 6, 2011.
 * M11 & M12 are viewed as being primary of phosphate interest with a large TiO₂ by product.

Ilmenite concentrate production flow sheet

- Minxcon conducted an independent pit optimisation exercise and confirmed viable open pit mining plan.
- FerroX plans to extract ore from surface operations and will focus on the higher TiO_2 and V_2O_5 grades.
- The mining method considered for the Tivani Project is conventional open pit mining using truck and excavator combinations.
- Run of Mine (“RoM”) will be transported to the beneficiation partner via road and railway.

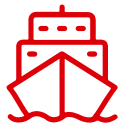


Supporting Infrastructure and Logistics



Rail

Existing railway line 16km from site.
Trains operated by Transnet Freight Rail.



Deep Water Port

Existing rail link between Palaborwa and the ports of Maputo in Mozambique (420km) and Richards Bay in South Africa (728km)

1. **Maputo:** Supermax (<60kt), and more recently allowing Cape (<150kt categories)
2. **Richards Bay:** Cape (<150kt) category

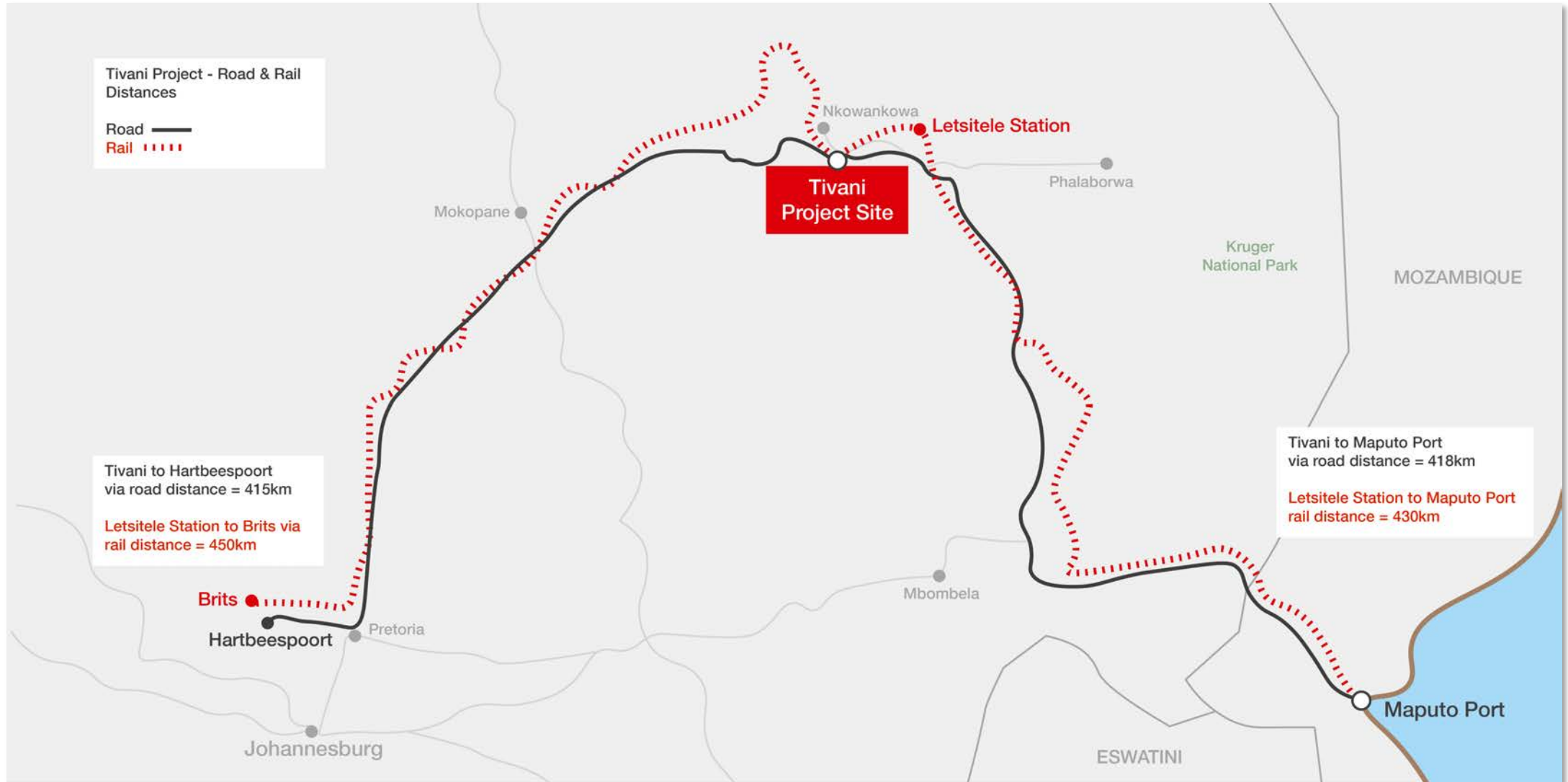


Power

Diesel Generator sufficient with advancement to Hydrogen Power via Phosphate/Fertilizer production. "Self-Generation" of up to 2 Megawatts power



Distances to Maputo Port & Harties via Road and Rail





Tailings Storage Facility at Harties

Key operating licenses and permits received

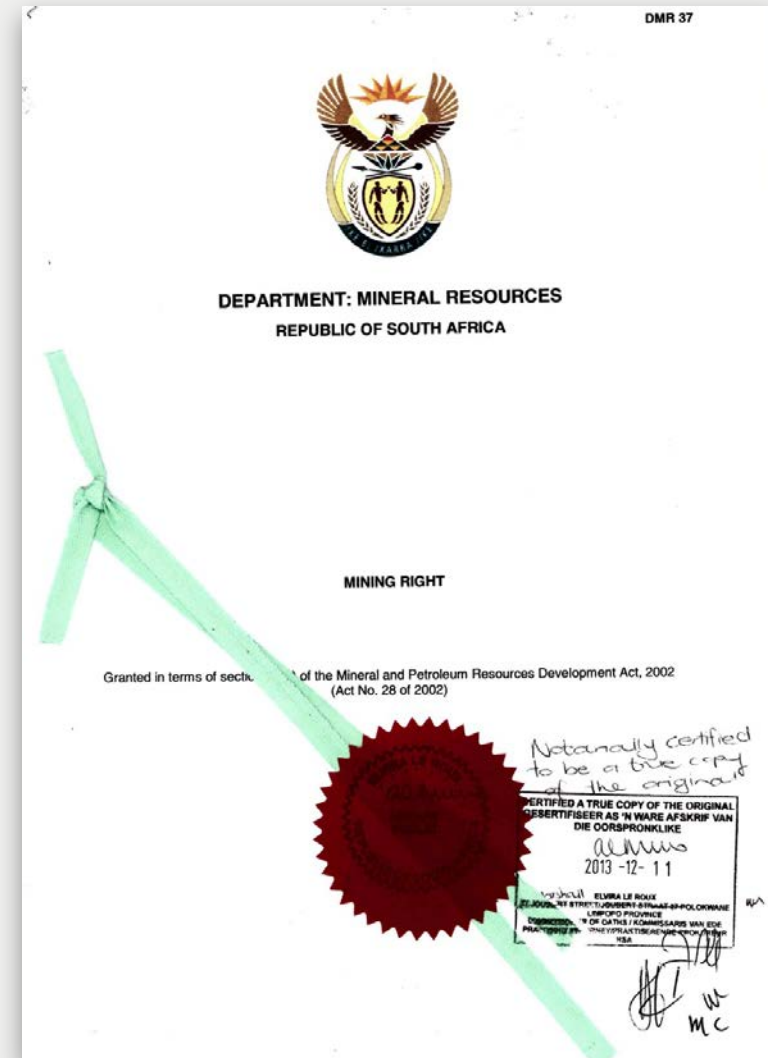
Water License

- Ferrox has received the approval of its “Integrated Water Use Licence Application” (IWULA).
- The IWULA is a critical requirement for the water usage and grants the water use license for Tivani.
- Received in February 2016, after a rigorous application.

Mining Right

- Mining Right received on December 11, 2013 from the Department of Mineral Resources, South Africa.
- Mining Right Has 30-year duration.
- Covering an area of 1,274 hectares or 13 square km.
- Mining Right comprises of Mohlaba’s location 567 LT.

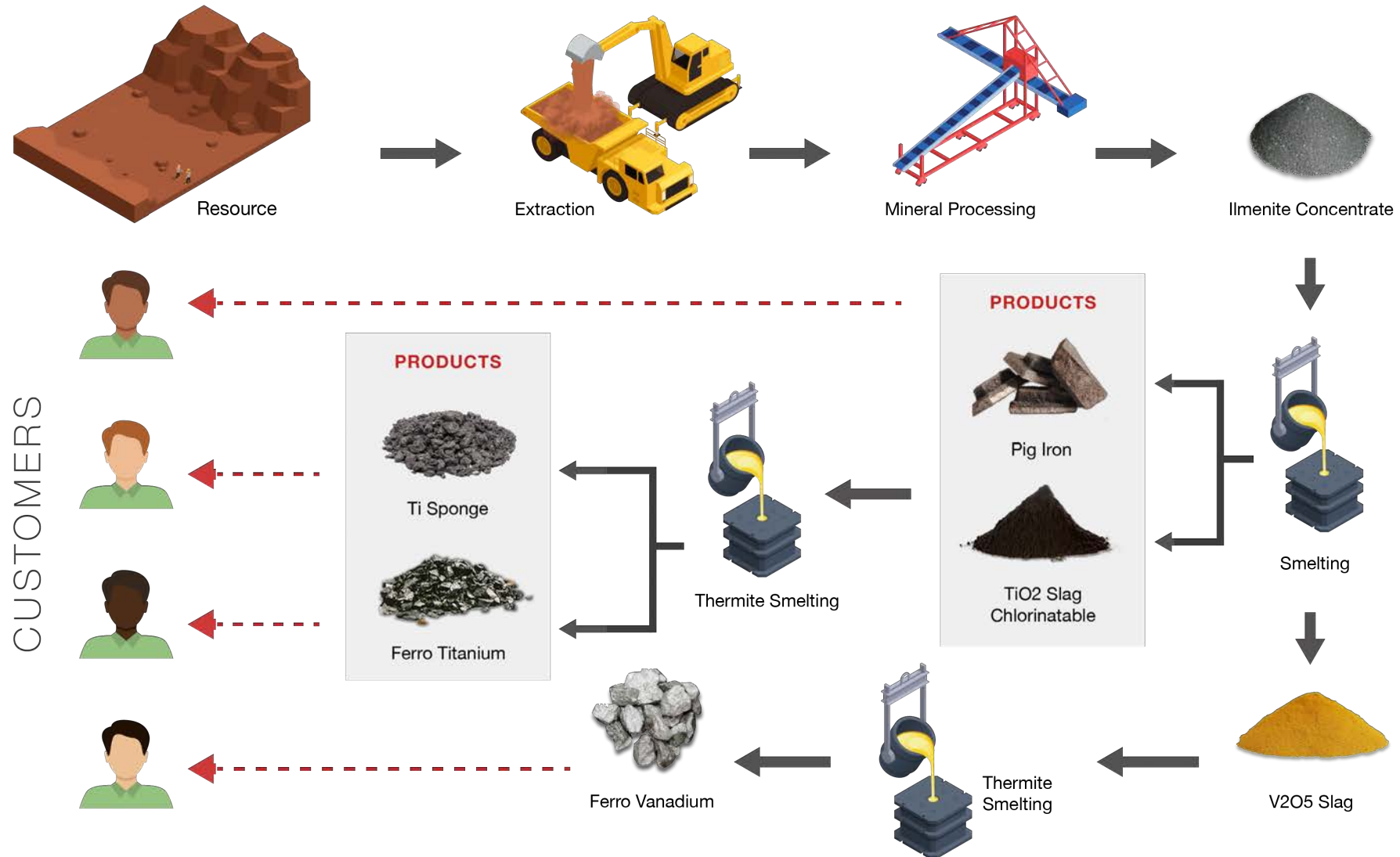
Ferrox has obtained the critical licenses required for mining operations at Tivani



04

Mineral Processing &
Product Flow Chart

Illustrative processing and product flow chart



Target concentrate composition

Compound	Analysis Non Selective	Analysis Selective
TiO ₂	45.8%	43.4%
FeO	41.2%	39.0%
Fe ₂ O ₃	10.9%	15.5%
P ₂ O ₅	1.2%	2.0%
Others	0.9%	0.1%
Total	100.0%	100.0%

Target composition of pig iron

PIG IRON SPECIFICATION

LMPI grade 3

GUARANTEED CHEMICAL ANALYSIS	
S	0.010% max

TYPICAL CHEMICAL ANALYSIS		
	LOWER LIMIT	UPPER LIMIT
C	3.4%	4.1%
Si	0.2%	0.4%
S	0.001%	0.010%
P	0.023%	0.030%
Mn	0.033%	0.045%
Cr	0.03%	0.05%
Ti	0.00%	0.04%
V	0.01%	0.03%

PIG IRON SPECIFICATION

LMPI grade 4

TYPICAL CHEMICAL ANALYSIS		
	LOWER LIMIT	UPPER LIMIT
C	2.8%	3.8%
Si	0.0%	0.4%
S	0.0%	0.3%
P	0.019%	0.030%
Mn	0.005%	0.117%
Cr	0.04%	0.05%
Ti	0.00%	0.04%
V	0.02%	0.03%

STANDARD SPECIFICATION STEEL GRADE PIG IRON

Brazilian Grade Pig Iron

GUARANTEED CHEMICAL ANALYSIS	
S	0.05%

TYPICAL CHEMICAL ANALYSIS		
	LOWER LIMIT	UPPER LIMIT
C	3.50%	4.50%
Si		1.50%
S		0.05%
P		0.15%
Mn		1.00%
Cr	Not specified	
Ti	Not specified	
V	Not specified	

Target composition of TiO₂ slag

Parameter	Chloride Grade Minimum	Chloride Grade Maximum	Sulphate Grade
Size	<850µm - >106µm	<850µm - >106µm	<106µm
Total Ti as TiO ₂	85	100	>75.00
Ti ₂ O ₃	15	35	<25.00
Insolubles	-	-	<4.00
Total Fe as FeO	-	12	-
Metallic Fe	-	0.5	-
CaO	-	0.18	-
MgO	-	1.2	-
MnO	-	2	<0.4
V ₂ O ₅	-	0.6	<0.4
Cr ₂ O ₅	-	0.3	<0.17
Al ₂ O ₃	-	2	-
SiO ₂	-	2.2	<6.0
ZrO ₂	-	0.35	-
NbO ₂	-	0.3	-
P ₂ O ₅	-	0.12	-

04

Team

Directors & Senior Management



Terrence P. Duffy
Chairman & Director

Terrence Duffy serves as the Chief Investment Officer of Lionhart Group, a hedge fund and a private equity fund. Mr. Duffy has many years of experience in the development of mining operations in South Africa, including Eastern Platinum Ltd. (ELR:TSX) and Petra Diamonds Limited (PDL:LON).



David Sims
Director

For the past 30 years David Sims has provided offshore financial services to companies in USA, Canada, UK, Switzerland, Brazil, Hong Kong, Japan and South Africa and is currently director of several international Hedge Funds.



Allen J. Palmiere
CEO

Allen Palmiere has a long career in the mining industry. Mr. Palmiere has previously held Chief Executive Officer positions at Barplats Investments Limited, Hudbay Minerals Inc. (HUD:TSX) and Adriana Resources (ADI:TSXV).

South African Technical Team



Dean Richards
Geologist

MGSSA - BSc. (Hons.) Geology

Dean Richards has over 22 years of experience in mining and minerals exploration industry. He is the founder of Obsidian Consulting Services, based in Johannesburg, South Africa. He is a Registered Scientific Professional and a member of Geological Society of South Africa. He has previously worked at Gemcom Africa and Tronox (Exxaro).



Dr. Michael Seeger
Sr. Mining Engineer

*BSc Eng Mining, MSc Eng
(Mineral Economics), PhD*

Dr. Micheal Seeger has over 22 years of experience in the heavy minerals, iron ore, gold and coal mining sectors. He has worked across the globe on operations and mine development projects for the companies like: Iscor Mining, Anglo Coal, AngloGold Ashanti, Newmont, Kaiser Aluminium and Universal Coal. He is based in Johannesburg, South Africa.



Daniel Dutton
**Chief Metallurgist
and Smelting Expert**

Daniel Dutton has 20 years of experience in iron, steel, alloys and vanadium industry. He has previously worked at Highveld Steel and Vanadium. He is an expert in Metallurgical Engineering (Extractive and Chemical). He is based in Johannesburg, South Africa.

Ferrox in-house advisors & BEE representatives



Norton Rose Fulbright Corporate & Legal Counsel

Norton Rose Fulbright is a premier international corporate law firm. They are one of the largest law firms in the world. Norton Rose Fulbright has a track record in providing a comprehensive range of legal and corporate services for over 200 years.



Bankuna Community Empowerment Trust Black Empowerment Partner

Bankuna Community has a 26% BEE interest in Tivani Pty Limited and has a good relationship with Ferrox's management team.



FERROX
Ferrox Holdings

**For more information,
please visit or contact**



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