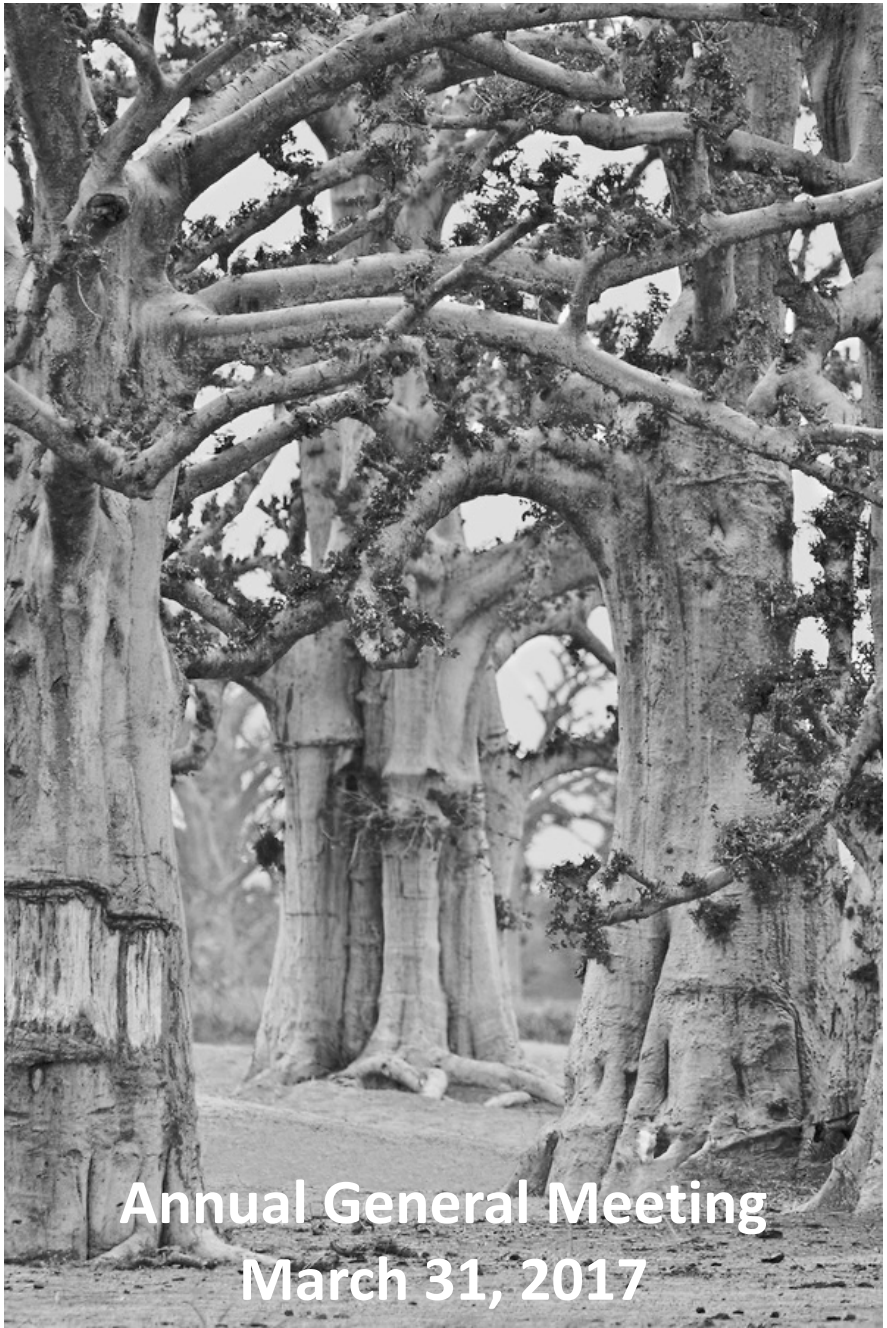
TSODILO RESOURCES LIMITED



Annual General Meeting
March 31, 2017

Gcwihaba Resources (Pty) Ltd.

Xaudum Iron Formation (XIF) Project

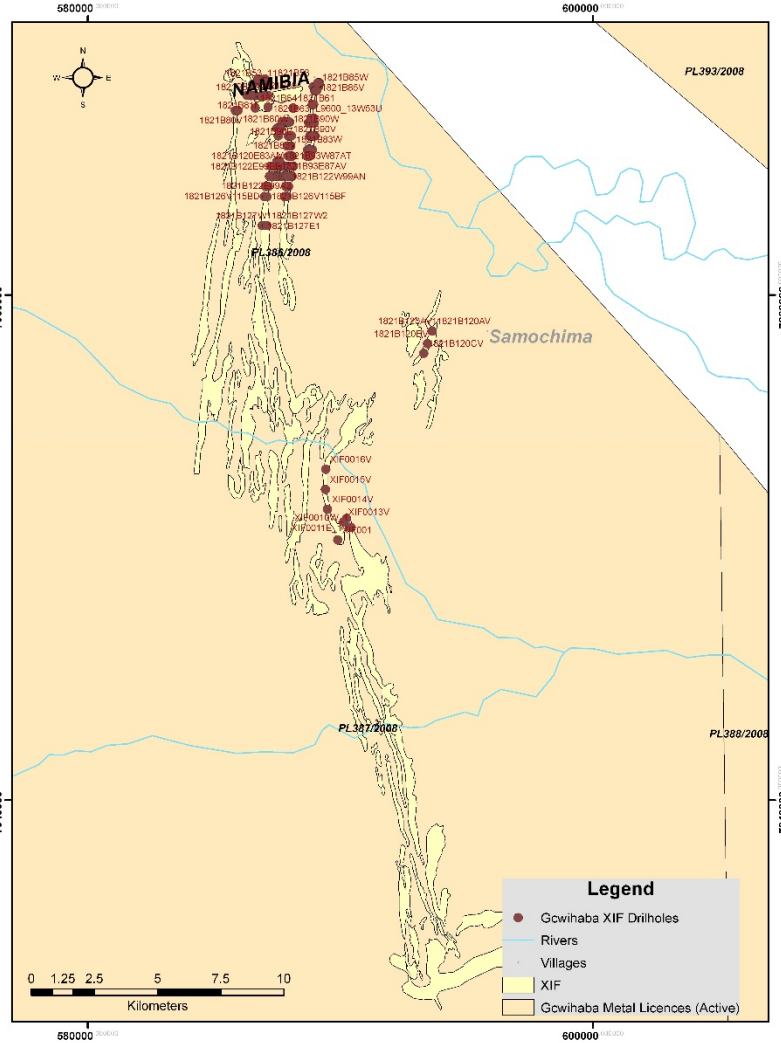
"the Tip of the Iceberg"

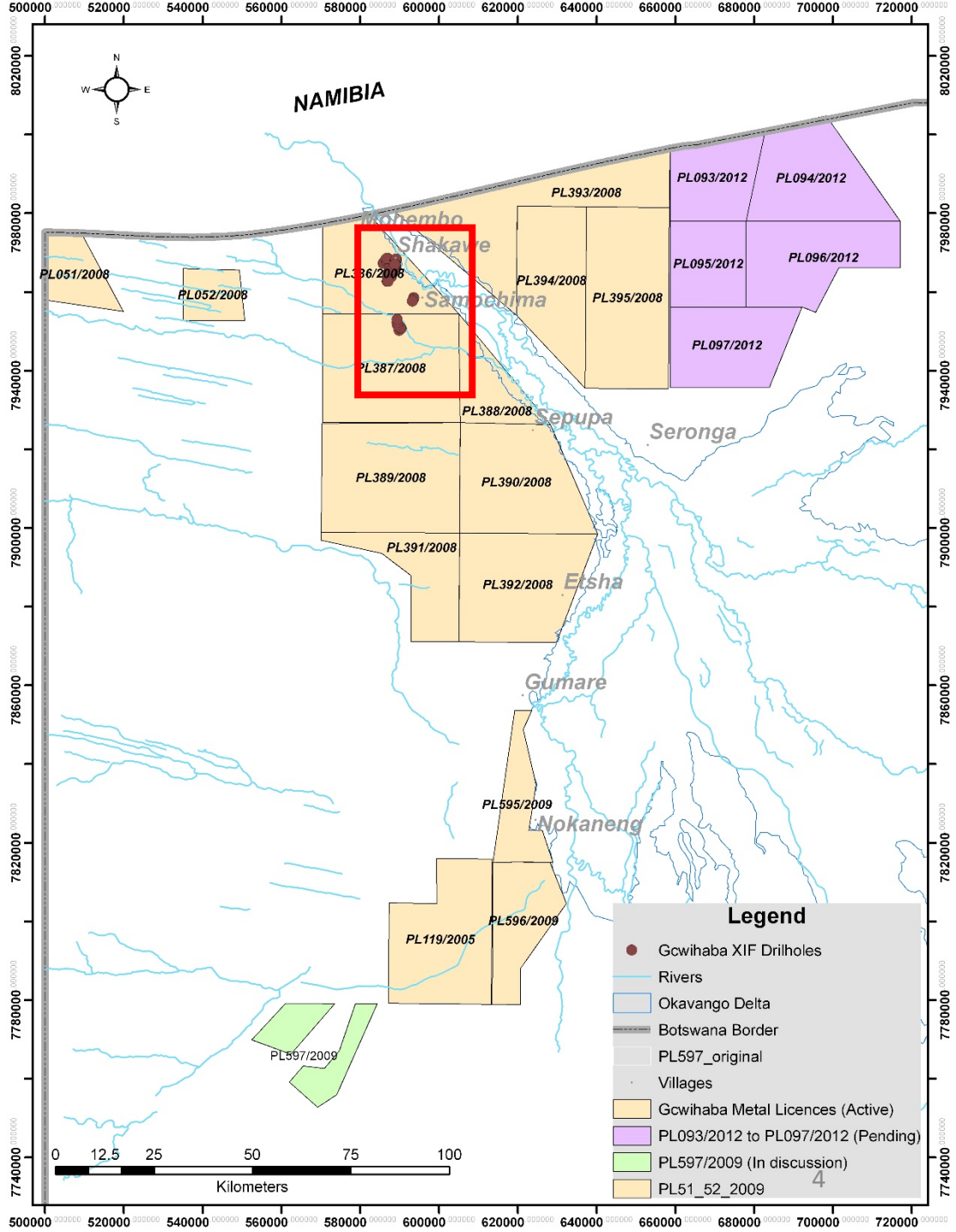
Forward-looking statement

National Instrument 43-101 - Standards of Disclosure for Mineral Projects, Form 43-101F1 and Companion Policy 43-101CP requires that the following disclosure be made:

This presentation contains forward-looking statements. All statements, other than statements of historical fact, that address activities, events or developments that the Company believes, expects or anticipates will or may occur in the future (including, without limitation, statements relating to the development of the Company's projects) are forward-looking statements. These forward-looking statements reflect the current expectations or beliefs of the Company based on information currently available to the Company. Forward-looking statements are subject to a number of risks and uncertainties that may cause the actual results of the Company to differ materially from those discussed in the forward-looking statements, and even if such actual results are realized or substantially realized, there can be no assurance that they will have the expected consequences to, or effects on the Company. Factors that could cause actual results or events to differ materially from current expectations include, among other things, changes in equity markets, political developments in Botswana and surrounding countries, changes to regulations affecting the Company's activities, uncertainties relating to the availability and costs of financing needed in the future, the uncertainties involved in interpreting exploration results and the other risks involved in the mineral exploration business. Any forward-looking statement speaks only as of the date on which it is made and, except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any forward-looking statement, whether as a result of new information, future events or results or otherwise. Although the Company believes that the assumptions inherent in the forward-looking statements are reasonable, forward-looking statements are not guarantees of future performance and accordingly undue reliance should not be put on such statements due to the inherent uncertainty therein.

Prospecting Licences



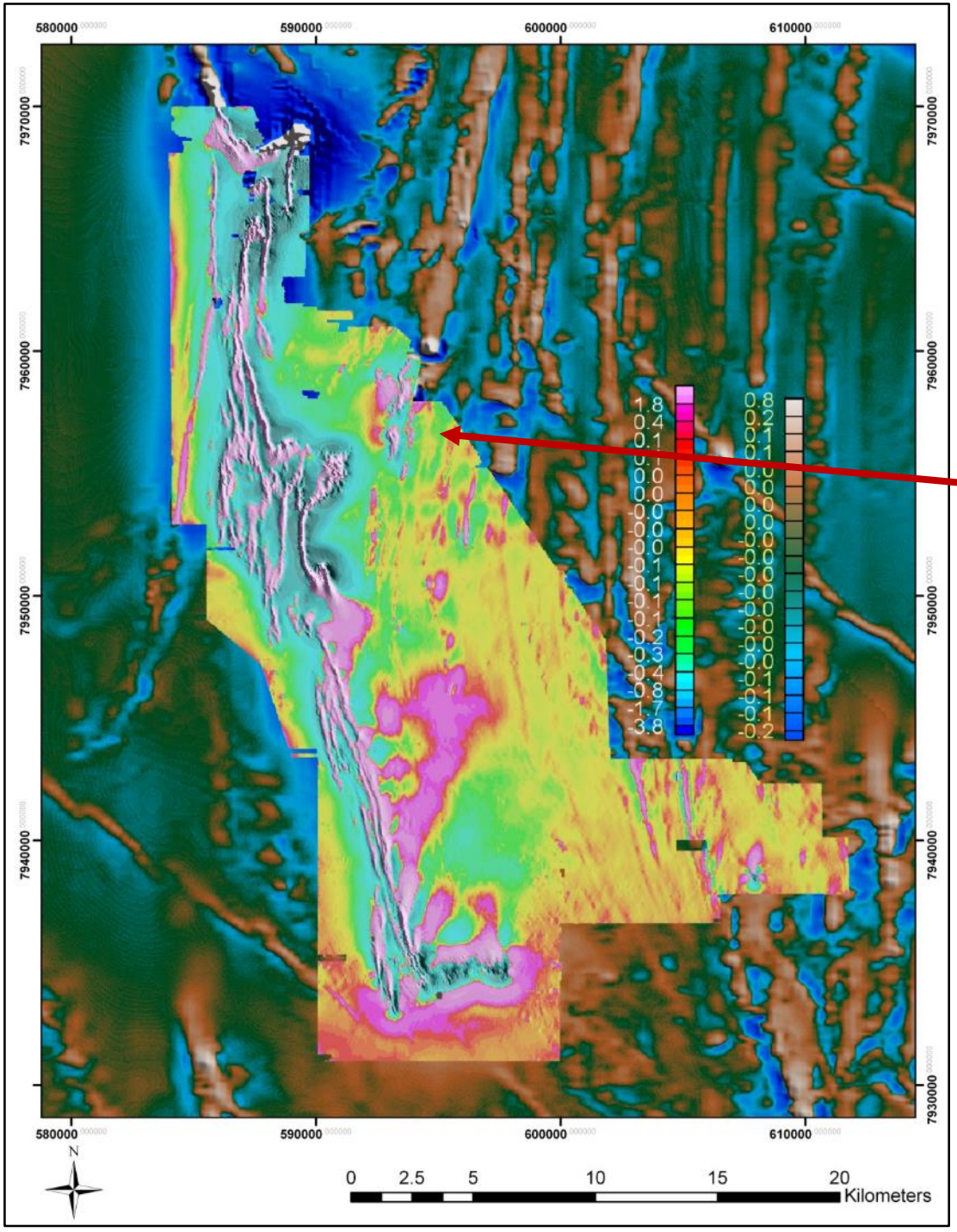


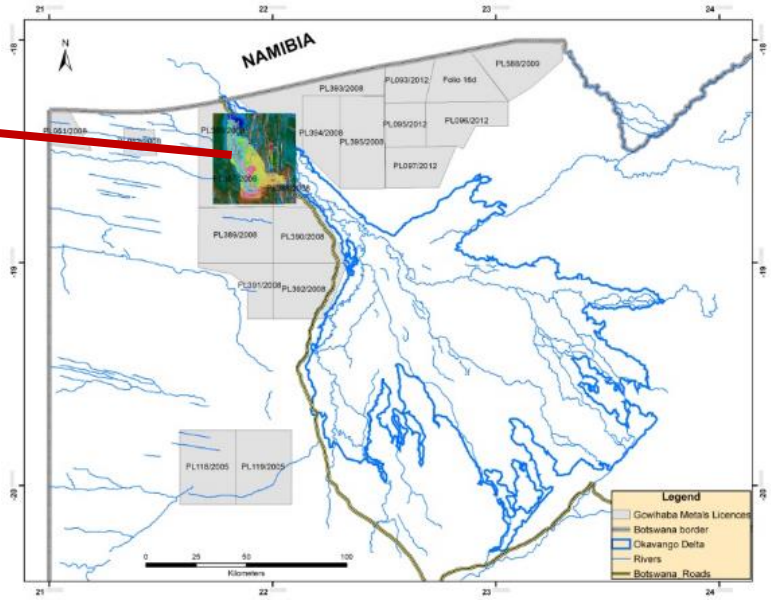
What you see on top is not the same as underneath…..

…so the project is driven by geophysics and drilling.

XIF

Ground Magnetics





Tsodilo ground magnetics:

- Over 20,000 line km walked (@50m and 20m line-spacing)
- ~1,800 km² covered

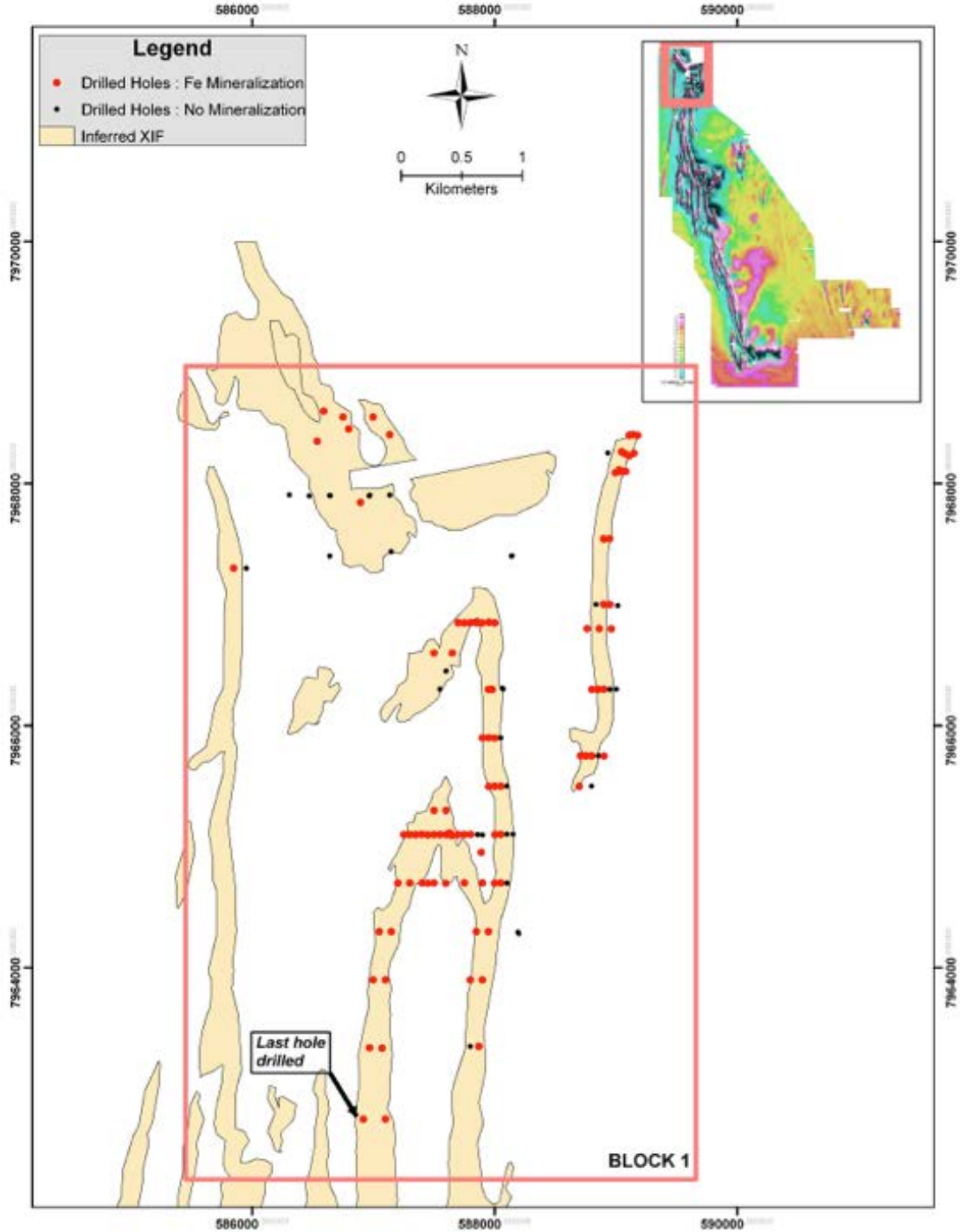
XIF: Work done to date

Activity	Amount	Comments
Drilling –Holes drilled Metres drilled Down-the-hole deviation surveys	159 holes 30,688.93 m 85 drill holes	All diamond drill core – stored in Core facilities in Shakawe and Maun. Angled holes only
Geochemical sample assaying	30,200 assays	Drill core samples in ALS (Johannesburg)
Petrography	82 reports, approx. 400 samples	Detailed reports on the petrology of drill core samples
Core Logging – Geological - Structural - Geotechnical	8,285 intervals 1,423 intervals 11,588 intervals	Drill core logging Orientated core using Reflex Act II core orientation system Drill core geotechnical logging
Density measurements	4,886 measurements	Density measurements of 2m of core samples
Magnetic Susceptibility measurements	119,184 measurements	Magnetic susceptibility measurements taken every 20 cm of core
Core Photographed	7,285 photos	All photos kept in Gcwihaba database
Ground Magnetic coverage	20,000 line km	This represents over 1,800 km²
Inversion model using ground magnetic data	5 to 7 Billion tonnes, at 15 to 40 % Fe.	Inversion modelling to create a conservative Exploration Target
***Gocad* geological modelling of Block 1**	441 Million tonnes at 29% Fe	Inferred resource estimate by SRK for Block 1
DTR metallurgical studies	16 bulk composites	Results indicate that high grade 67% Fe concentrate can easily be produced

Block 1

- 156 drill holes in Block 1 totalling 30,000 m of drill core
- These holes intersected 9,022 m of Fe mineralization
- Used to define geological model of Block 1

***Note – Block 1 only encompasses a small part of the potential Fe formation mineralization**



Generalised Geology

- XIF within Grand Conglomerate,

  Central African Copper Belt extends into NW Bots

- XIF, a magnetic strong anomaly,

  Strike length of around 35-40 km

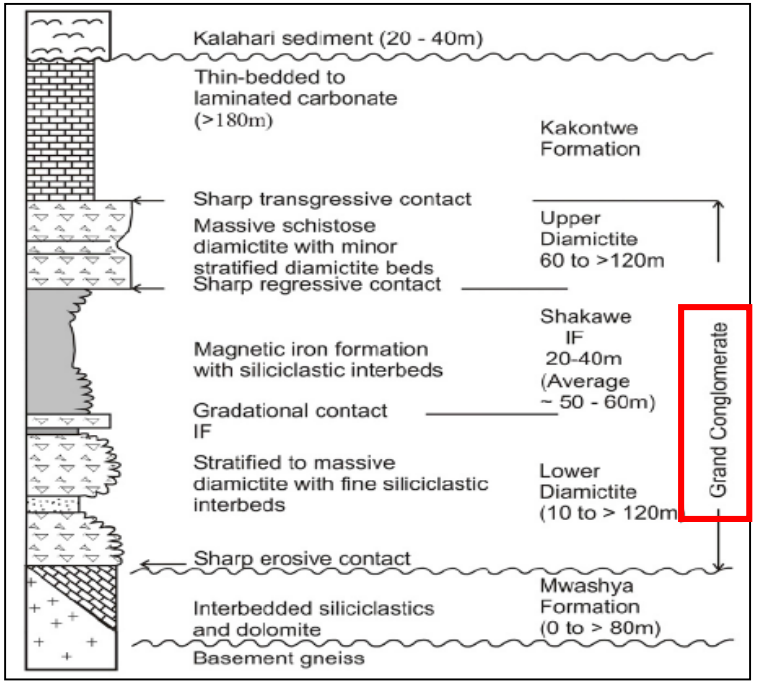
- XIF is deformed hence,

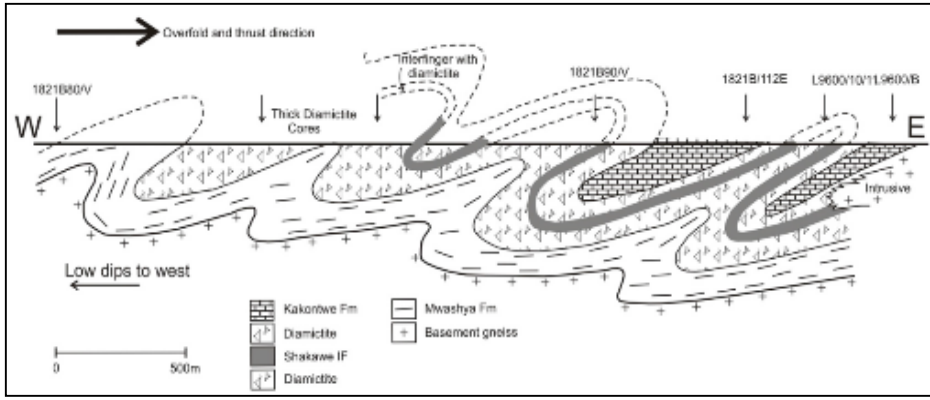
  Ironstones are repeated in regional folds

- XIF Diamictites are equivalent in age to

  Chuos (Namibia) and

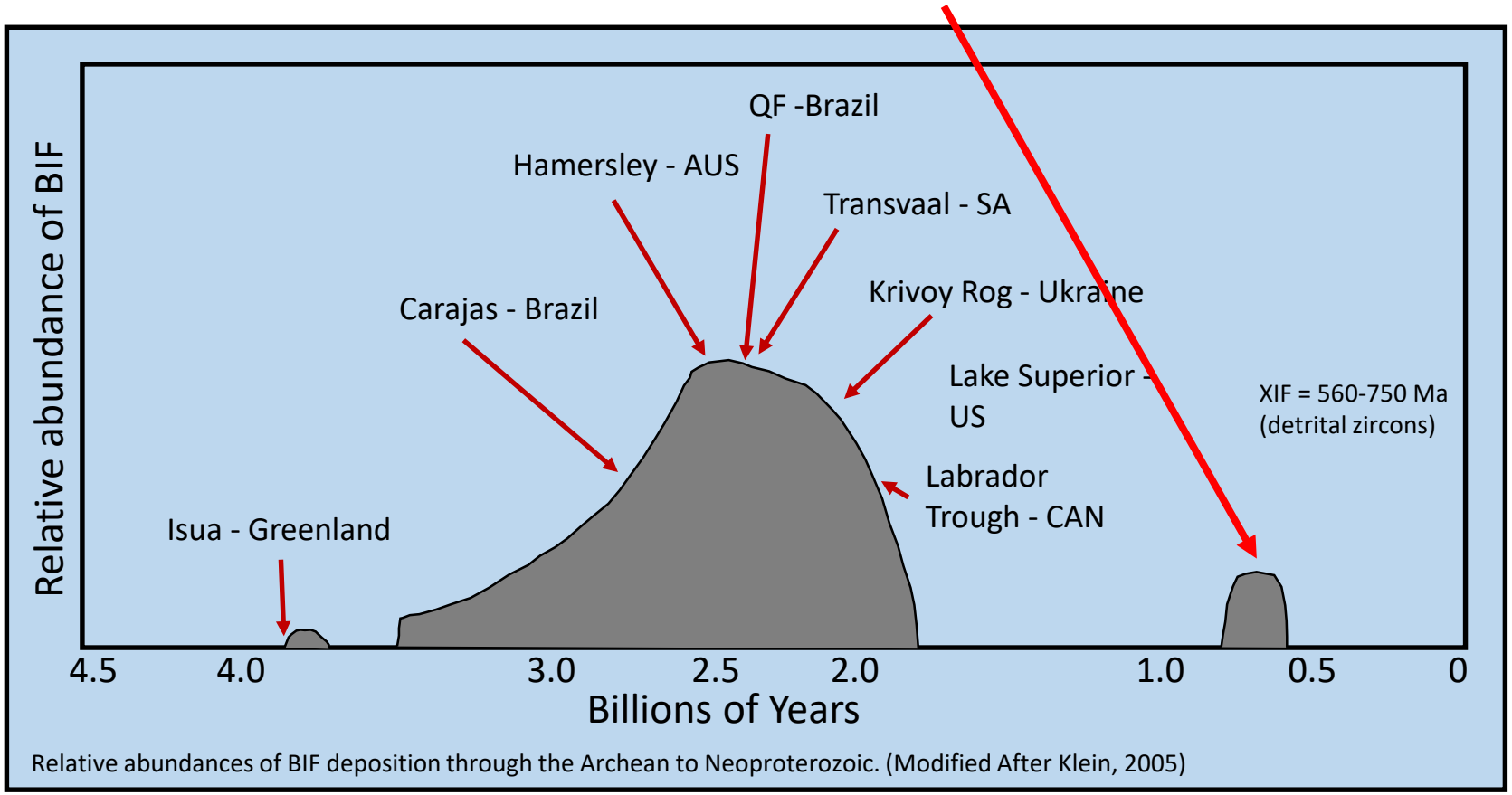
  Grand Conglomerate (DRC)





- Sequence, incl. ironstones, overlies **granitoid Archean-Proterozoic basement**.

XIF is a Neoproterozoic Rapitan Style Magnetite BIF



Relative abundances of BIF deposition through the Archean to Neoproterozoic. (Modified After Klein, 2005)

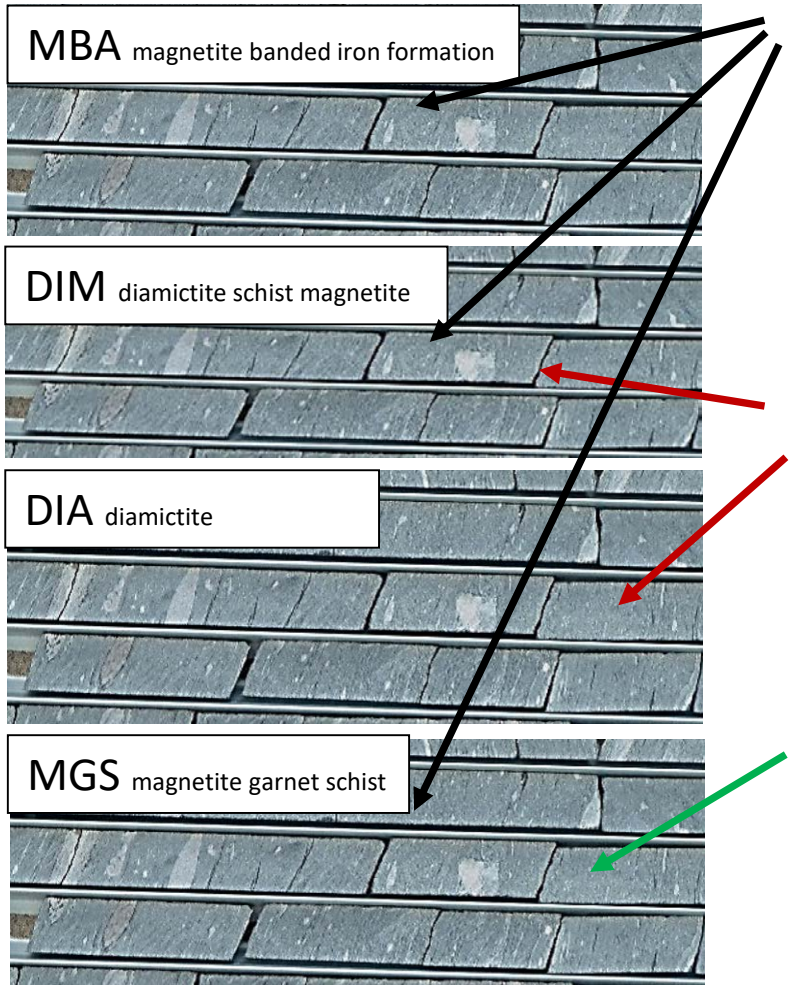
Neoproterozoic BIF – "Snowball Earth" - Iron precipitation caused by oxidation after retreat of ice-sheets

Other Neoproterozoic BIF Resources:

- Rapitan Group, Canada (18.6 bt at 47% Fe)
- Jacadigo Group, Brazil (~30 bt at 20-25% Fe)
- Braemar Iron Formation, Australia (1.4 bt at 15.5% Fe)
- Chuos Formation, Namibia (~2-3 bt at 20-28% Fe)

Depositional Controls on Mineralization Styles

The depositional regime of XIF is controlled by 2 main and 1 minor sedimentary inputs



1. **Major** – Basin Fe mineral precipitation that makes up the high magnetite component

   Degree of Fe mineralisation controlled by Fe input into the basin. The concentration of Fe minerals are diluted by the degree of terrigenous-pelitic sedimentary input.

1. **Major** - a shaly to sandy terrigenous sediment input into the basin

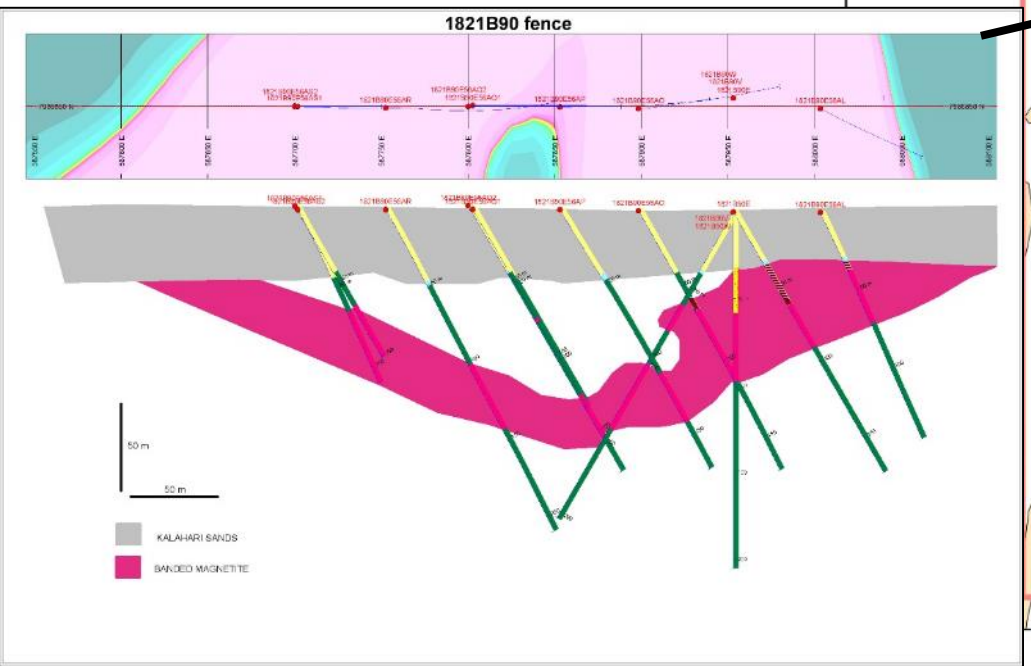
   Dominated by terrigenous sediment from erosion of hinterland as a result of the glacial activity during this time.

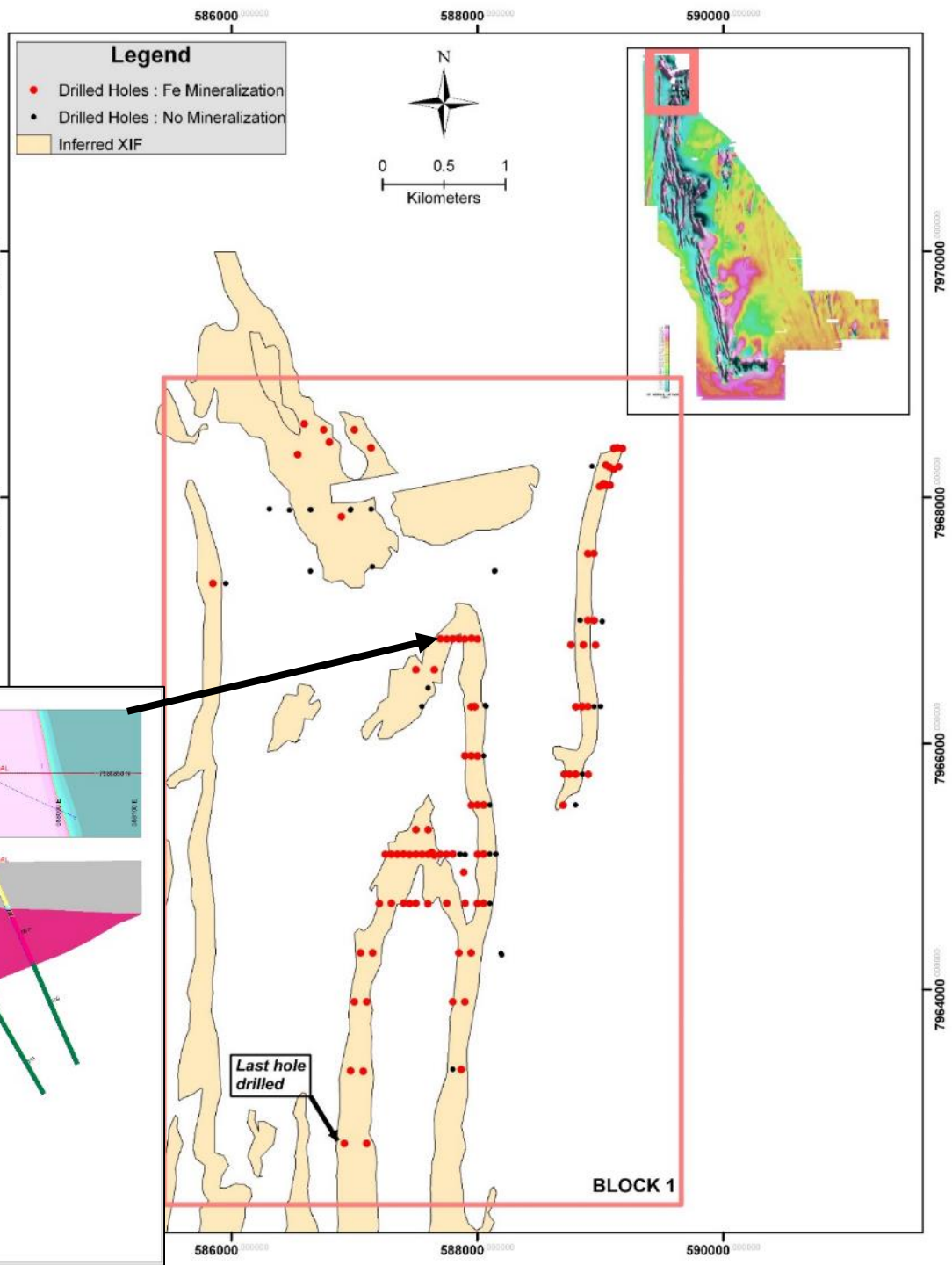
2. **Minor** – a shaly calcareous sedimentary material.

   A mixture of terrigenous sediments and calcareous material from the marine environment

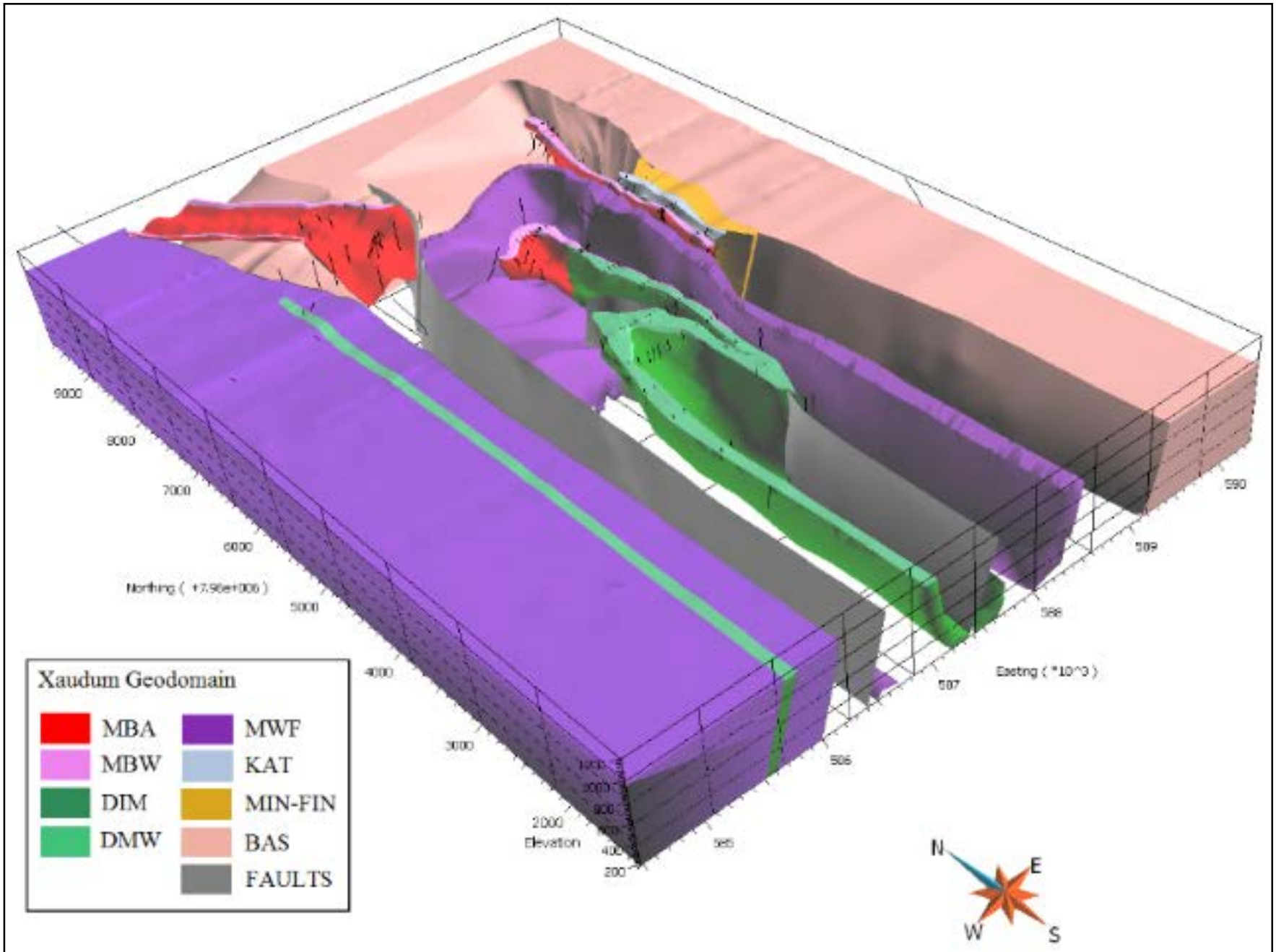
Cross-sectional interpretation

- East – West drilling across main strike of mineralization
- Fold hinges best for large areas of mineralization
- Sections are scanned and geo-referenced into *GOCAD* 3D modeling software

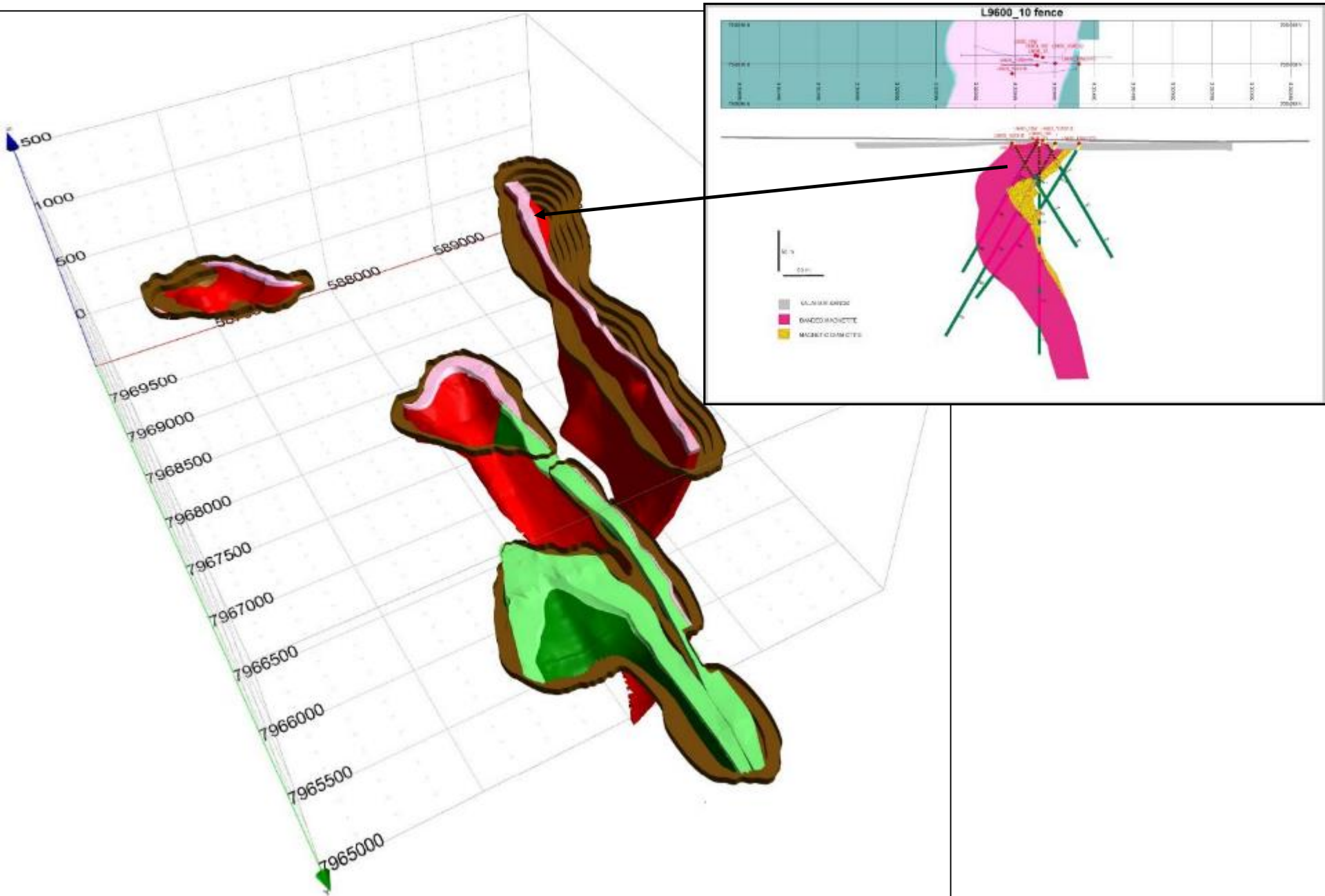




Geological model

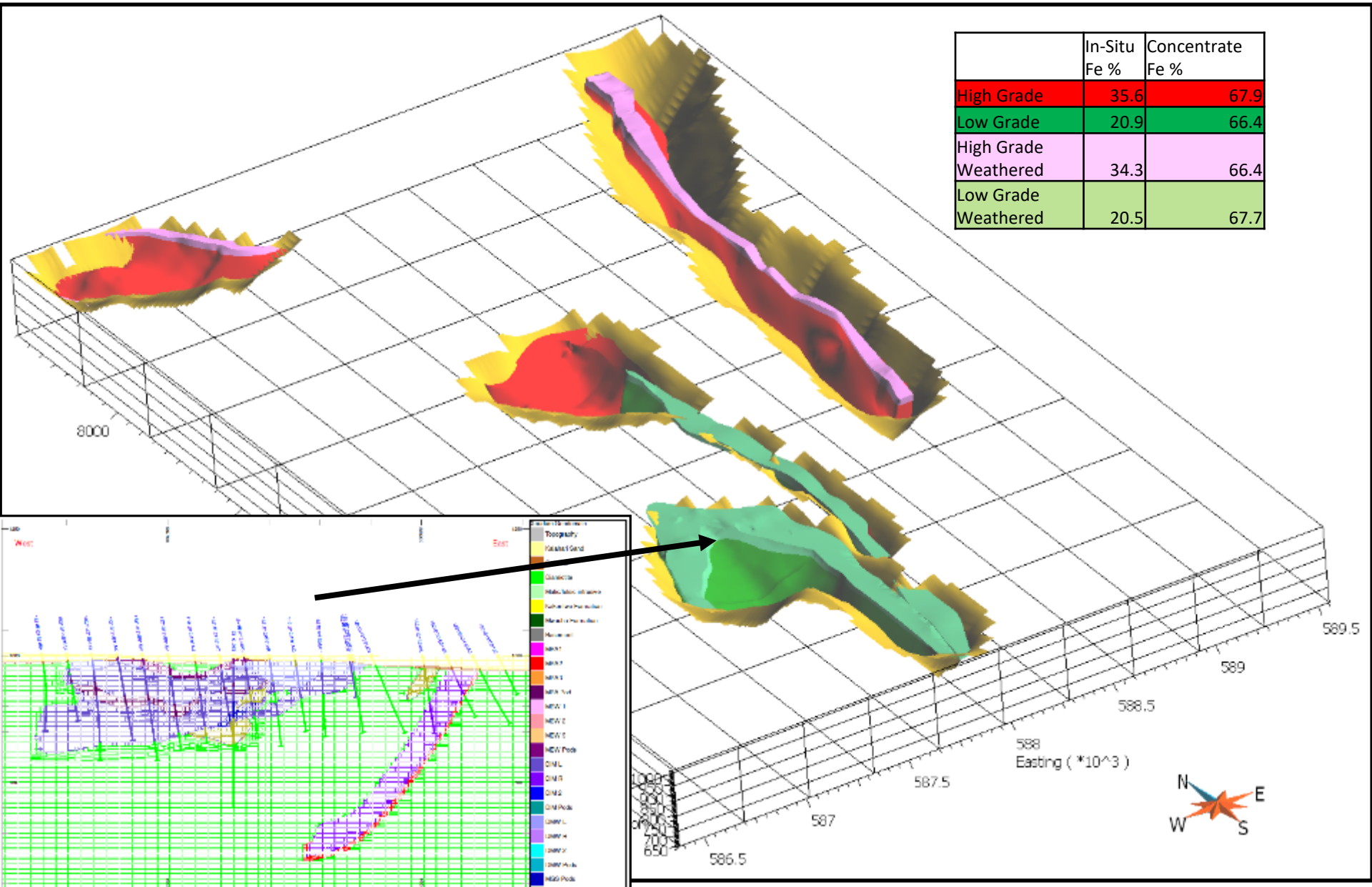


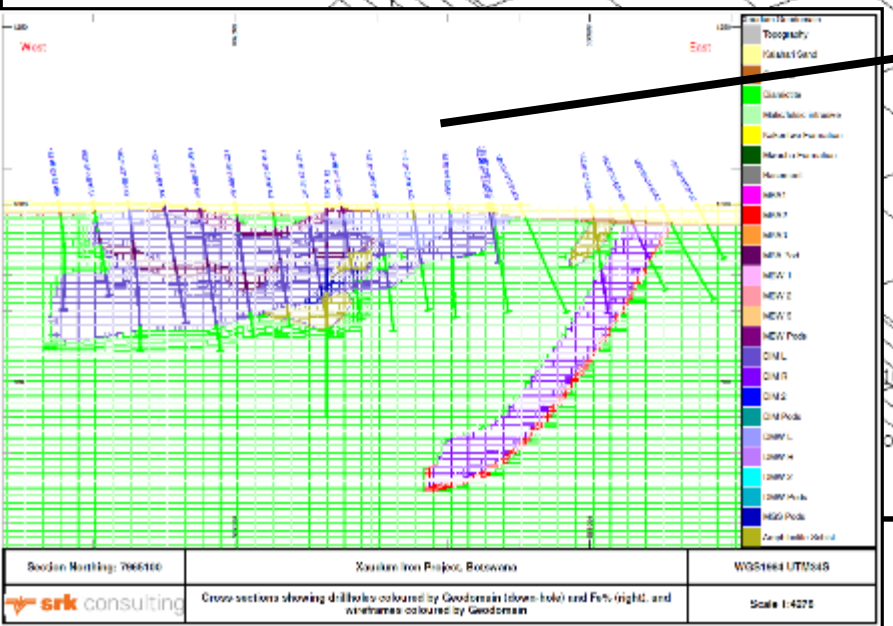
Geological model with pit outline



Geological model – Grade and pit outline (SRK)

	In-Situ Fe %	Concentrate Fe %
High Grade	35.6	67.9
Low Grade	20.9	66.4
High Grade Weathered	34.3	66.4
Low Grade Weathered	20.5	67.7

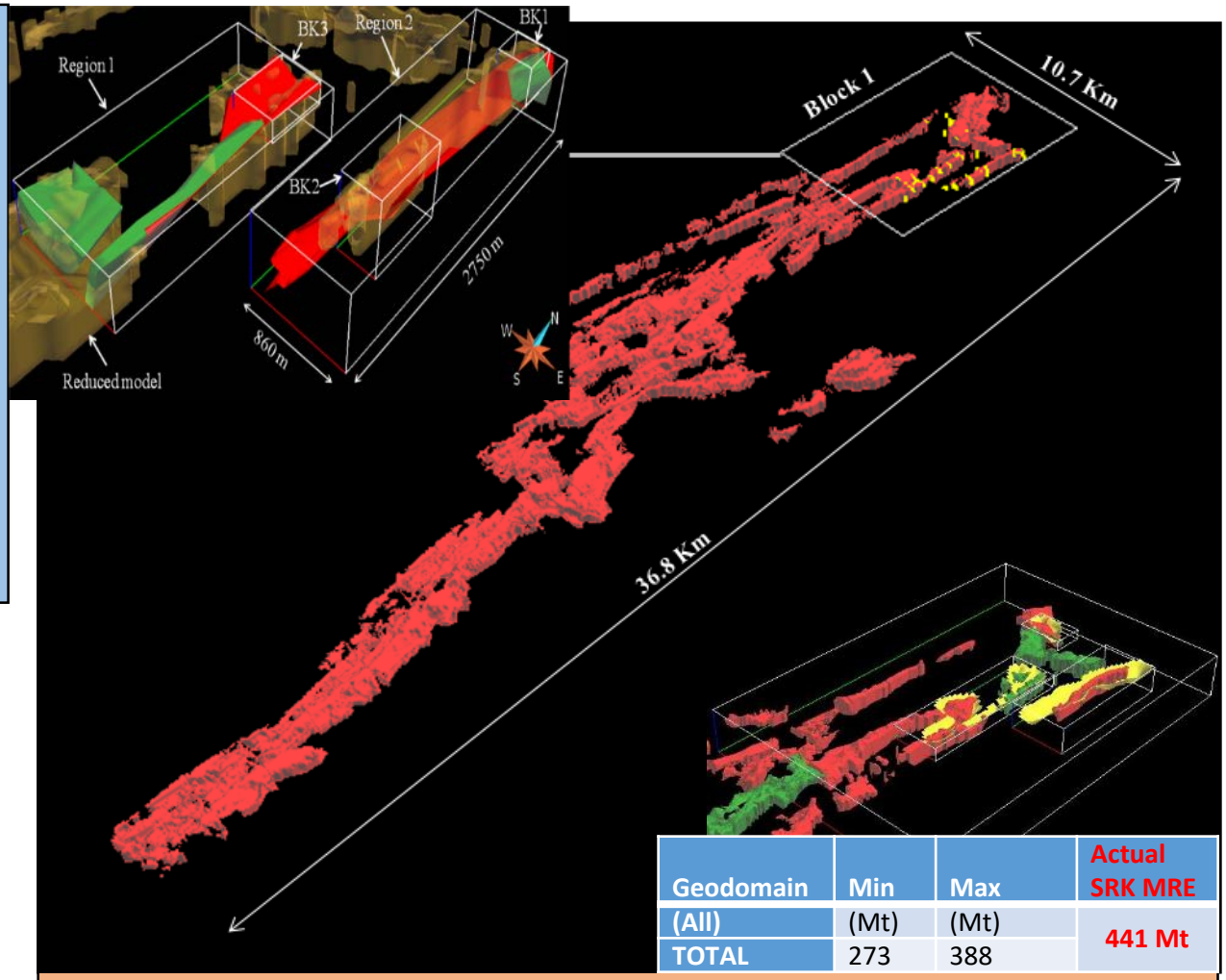




XIF - Conservative exploration target of 5 - 7 Bt

- **Conservative exploration target of 5 - 7 Bt**
- **Grade ranging of 15 – 40 % Fe*.**
  - **Grade range based on general observed mineralization range**
- **Only a small part of total magnetic signature has been drilled to date**

**It is important to note that the tonnages and grade quoted in this exploration target is conceptual in nature, there has been insufficient exploration to define a mineral resource and that it is uncertain if further exploration will result in the target being delineated as a mineral resource as defined by NI 43-101.*



Geodomain	Min	Max	Actual SRK MRE
(All)	(Mt)	(Mt)	441 Mt
TOTAL	273	388	

Red area = Ground magnetic inversion model

Current drill holes in yellow.

National Instrument 43-101 report

MINERAL RESOURCE ESTIMATE FOR THE XAUDUM IRON PROJECT (BLOCK 1), REPUBLIC OF BOTSWANA

REPORT PREPARED UNDER THE GUIDELINES OF NATIONAL INSTRUMENT 43-101 AND ACCOMPANYING DOCUMENTS 43-101.F1 AND 43-101.CP.

Prepared for

GCWIHABA RESOURCES (PTY) LTD

Authored By:
Howard Baker, SRK Consulting (UK) Ltd – Principal Consultant (Resource Geology)
FAusIMM(CP) #224239

Report Prepared by

srk consulting

SRK Consulting (UK) Limited
UK05835

Qualified Person: Howard Baker, FAusIMM(CP)
Effective Date of Report: 29 August 2014

- **In the opinion of the SRK the quality and quantity of available data is sufficient to generate an Inferred Mineral Resource and in accordance with the guidelines of NI 43-101.**
- **In total an Inferred Mineral Resource of 441 Mt grading 29.4% Fe has been derived comprising:**

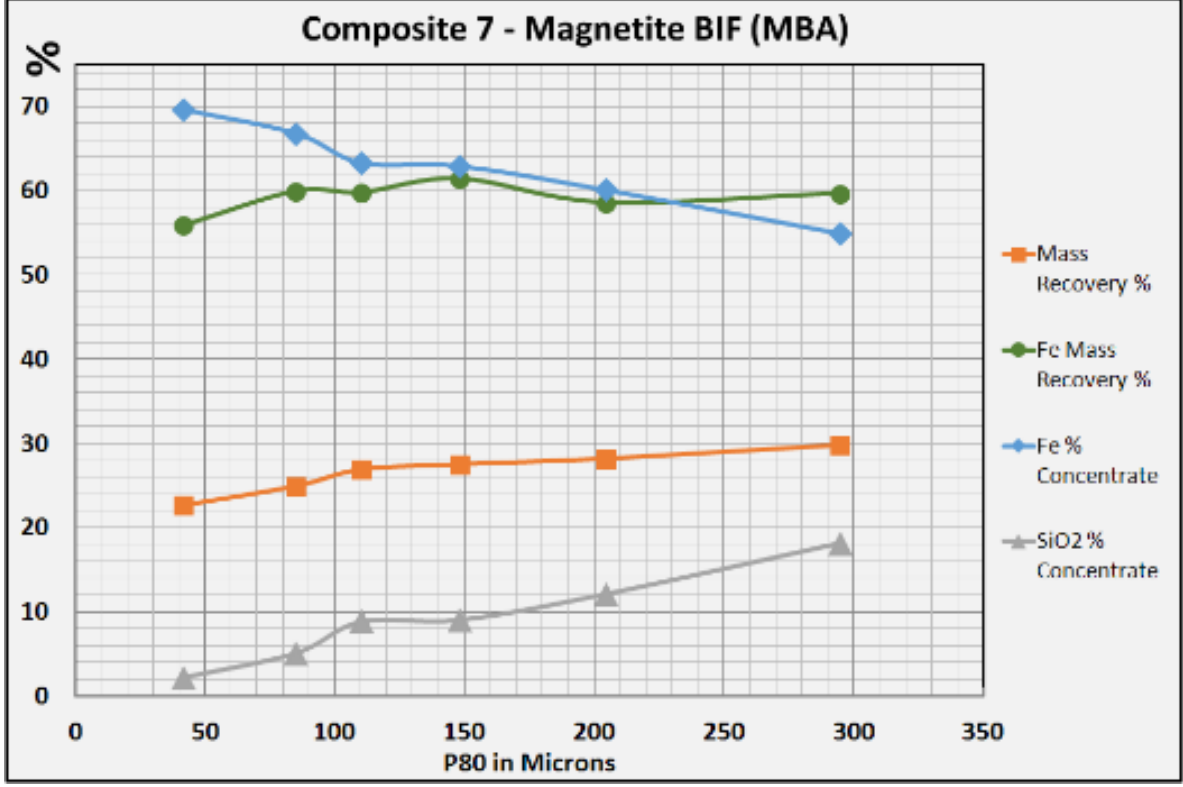
  236 Mt MBA (35.6% Fe)
  148 Mt DIM (20.9% Fe)
  21 Mt MBW (34.3% Fe)
  7 Mt MGS (22.1% Fe)
- **This mineral resource is restricted to all classified material within the optimised pit shell and above a cut-off grade of 12% Fe. This represents the material which SRK considers has the potential for eventual economic extraction.**

CIM Compliant XIF mineral resource statement: Block 1

NI 43-101 Mineral Resource Estimate conducted by SRK (29th August 2014)

Geodomain Zone	Resource Category	Tonnes (Mt)	Fe %	SiO2 %	Al2O3 %	P %
MBA	Inferred	236	35.6	34.0	4.0	0.3
DIM	Inferred	148	20.9	51.0	9.1	0.2
MBW	Inferred	21	34.3	35.4	4.4	0.2
DMW	Inferred	29	20.5	49.5	8.2	0.2
MGS	Inferred	7	22.1	50.8	8.9	0.2
TOTAL	**Inferred**	**441**	**29.4**	**41.0**	**6.1**	**0.3**

DTR testwork confirms premium grade magnetite product potential



	P80 (Grind Size)	Fe %	SiO_2 %	Al_2O_3 %	P %	S %
Averaged Head grade		31.1	38.1	5.1	0.26	0.04
DTR test results	80 microns	67.2	3.8	0.5	0.08	0.03

DTR summary:

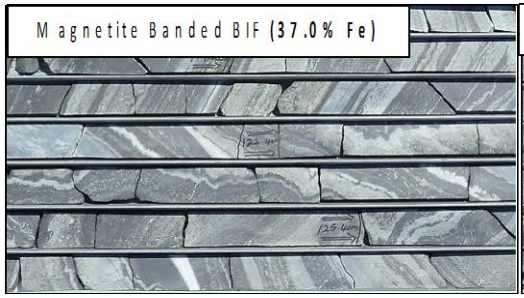
1. Mineralized units capable of producing premium grade magnetite >67 % Fe
2. Moderate grind sizes needed
3. Good relative mass recoveries achieved

Post Beneficiation Tonnages

Based on the DTR mass recoveries at P80 grind sizes of 80 microns

Resource Statement				DTR Magnetic Separation Concentrate Information (P80 = 80 Microns)		
Geodomain	**Resource Category**	**Tonnes (Mt)**	**Fe % head**	**Mass Recovery**	**Concentrate (Mt)**	**Fe % concentrate**
MBA	Inferred	236.0	35.60	**45.5**	107.4	67.9
DIM	Inferred	148.0	20.90	17.9	26.5	66.4
MBW	Inferred	21.0	34.30	25.4	5.3	66.4
DMW	Inferred	29.0	20.50	21.6	6.3	67.7
MGS	Inferred	7.0	22.10	10.7	0.7	63.2
TOTAL	**Inferred**	**441.0**	**29.4**	**33.2**	**146.2**	**67.2**

First step: create magnetite iron ore concentrate = ~67% Fe Superfines (Large or small scale)



1. Dig Raw Ore, Crush/Grind/Mill
2. Magnetically Separate (Beneficiate)
3. Stockpile 67% Fe superfines (<100 microns) for processing

Product is premium high grade magnetite @ 67% Fe

Option 1: Process Magnetite Superfines to high grade pellets on large scale

Create Pellet Feed: ~40% bonus on 62% Fe ore price (current = $75-80 USD/t), plus ~15% grade bonus = **~$125 to 130 USD/t**

- Mix 67% Fe magnetite product with Bentonite and Limestone fluxes
- Heat and fuse to Pellet

DRI = higher premium pellet around 67% Fe.

BUT: Large scale project requires Transport Link – 3 scenarios

1. Trans-Kalahari Rail TKR from Botswana coal fields to Walvis Bay requires link from Shakawe (High Capex/High Opex)

2. Slurry pipeline to join up with TKR or all way to Walvis Bay (High Capex/Low Opex)

3. Overhead Milotek Furtran from Shakawe to TKR (lower Capex/Mod to low Opex)

Large Scale Project – Power

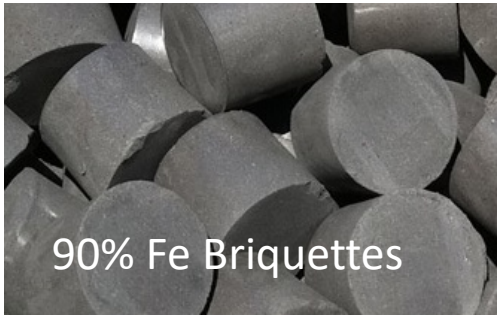
- BPC have plans to increase the existing power capacity in Shakawe.
- No timeframes given, however if large project was planned timeframes and magnitude of power supply would be negotiable

Option 2a: Produce 'Supa scrap' with small scale start up (Lower Capex)

IMBS (Iron Mineral Beneficiation Services) Process - exact price of the two products of IMBS process is unknown but likely >**$130 per tonne – Supra scrap would get scrap metal prices $200 to 250**

- Small Scale modular plant – **CAPEX ~$15 million**
- Uses Thermal Coal – major advantage over pelletizing – **58% Coal to product ratio**
- High quality product – larger sales premium than pellets – **50,000 tpa output** per module
- Used in Phalaborwa South Africa

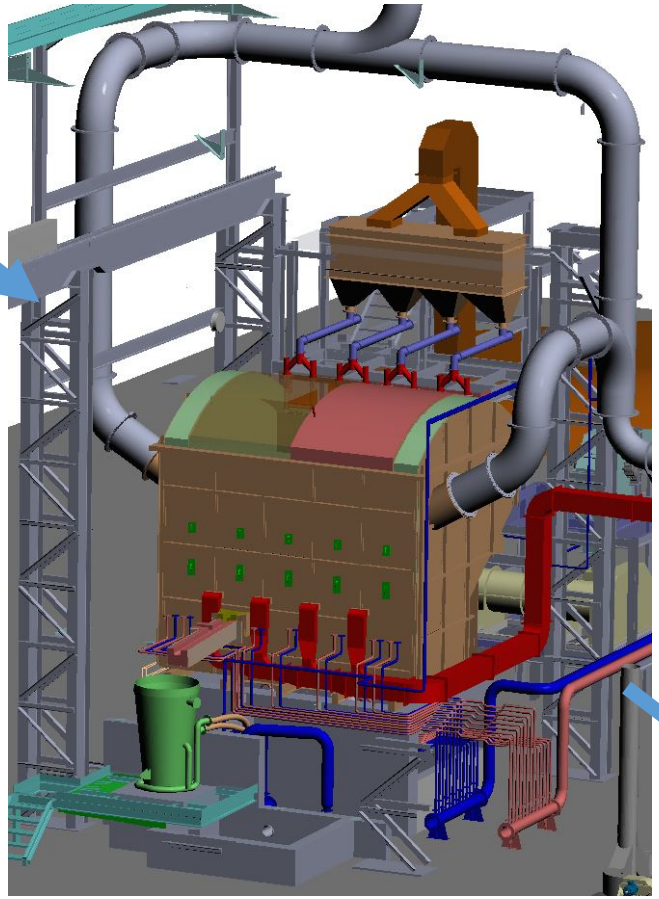
"Supa Scrap"
99.9% Fe



OR

Option 2b: Produce pig iron with small scale start up (Lower Capex)

ESS Prodilux furnace technology (manufactured by GLPS – Middelburg South Africa) Pig Iron production Process – Pig iron prices **$250 to 300 per tonne**

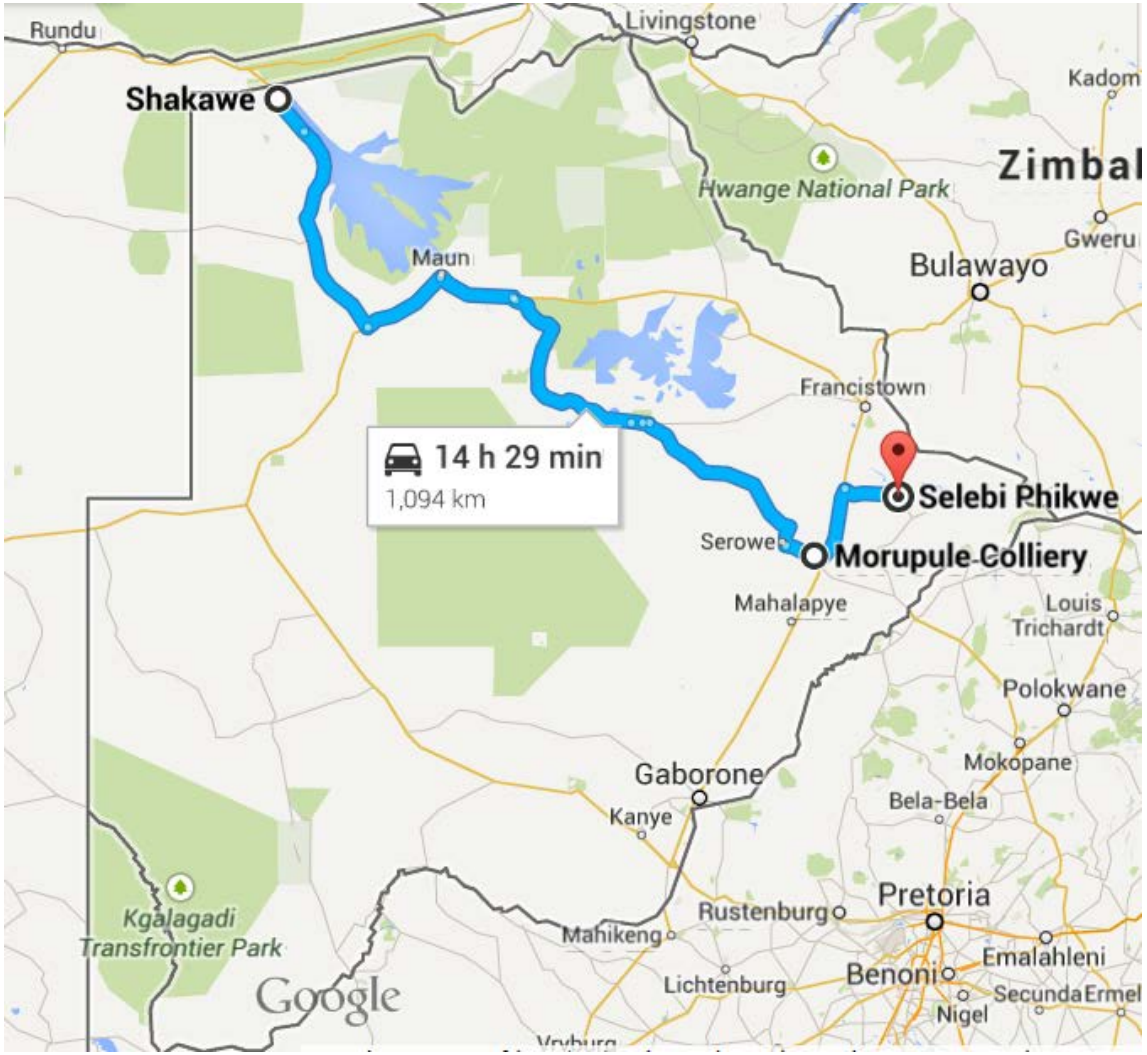


- Small Scale modular plant – CAPEX ~$8-10 Million
- Uses Thermal Coal
- Less coal than IMBS- **49.5% Coal to product ratio**

- Pig iron product $250 to 300 per tonne
- BUT a steel plant could be developed with this to produce steel within Botswana
- In India for instance a plant was commissioned to create pig iron from waste Fe material (54% Fe) for Vanchem (Duferco)

Advantage of small scale start-up within Botswana for local Iron/Steel Industry

- Low CAPEX transport options (no major infrastructure projects) – e.g road train option etc.
- Some type of small scale beneficiation process (e.g IMBS or ESS Prodilux technologies)
- Sell 'supa scrap' to Pula Steel/BCL steel plant at Selebi-Phikwe
- Ship raw magnetite to Selebi-Phikwe to produce steel (Depends on plant capabilities – unknown)
- Ship magnetite to coal (road train?) then product to Selebi Phikwe.



Shakawe to Morupule = 953 Km

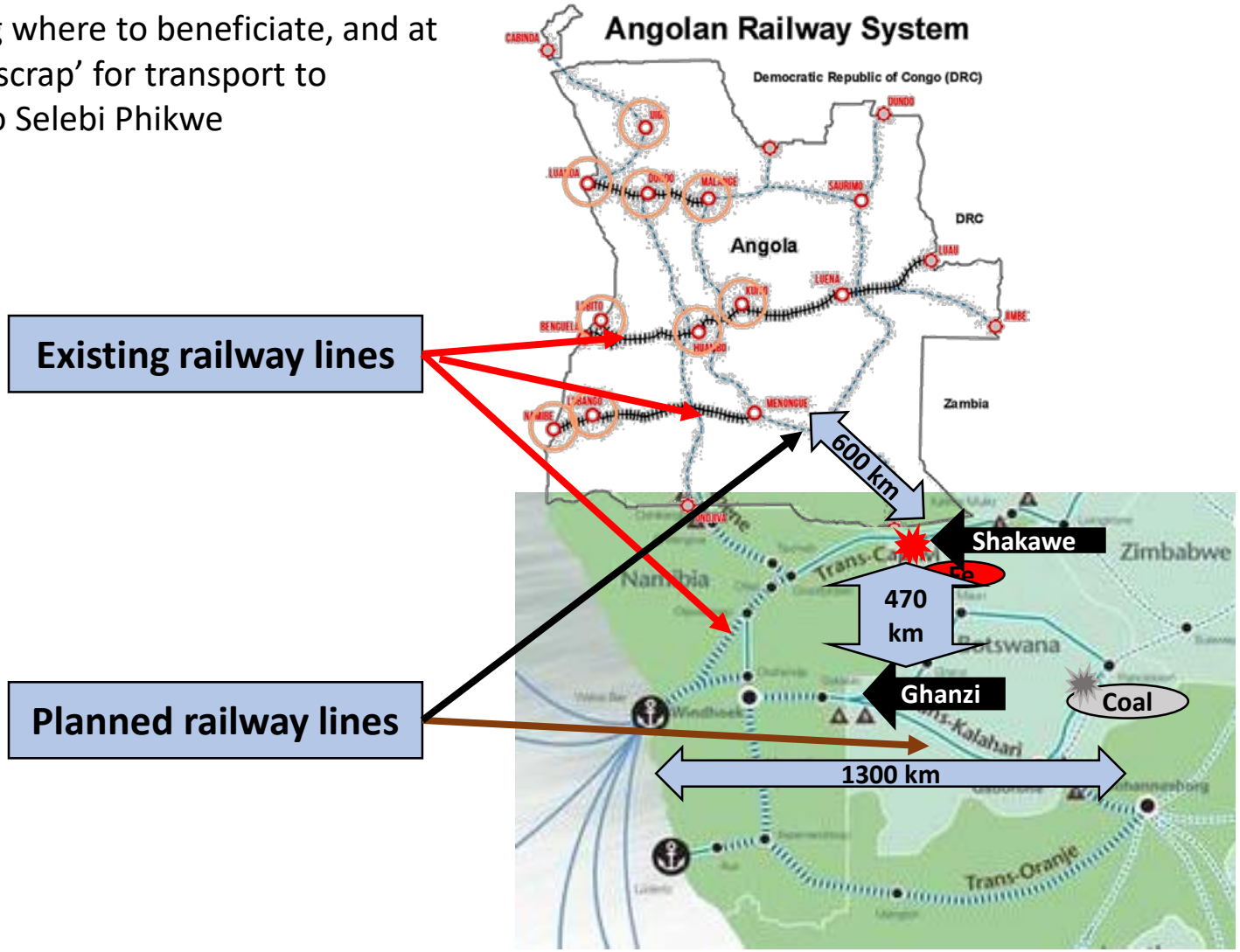
Morupule to Selebi-Phikwe = 141 Km

TOTAL = 1,094 Km

Small scale start-up Namibia/Angola/Botswana

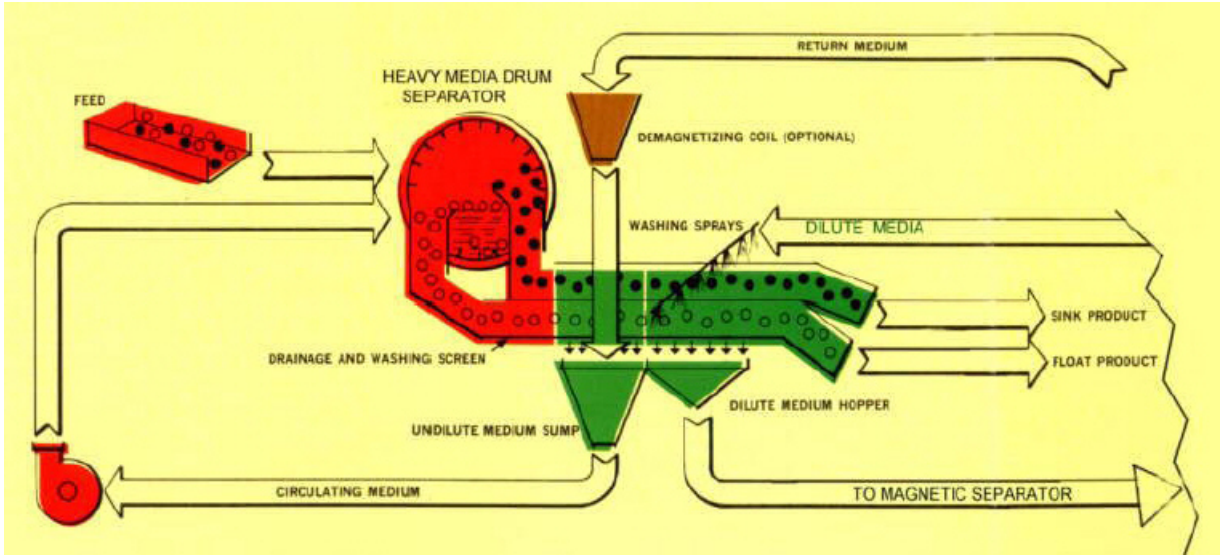
Issues:
1. Timing of TKR/Angola
2. Will TKR go through Ghanzi?
3. Can coal destined for Walvis Maybe off-loaded logistically?

- Transport magnetite concentrate to Ghanzi (shorter distance than to Morupule) and at Ghanzi (TKR) load magnetite for Walvis Bay
- Or at Ghanzi off-load coal for Shakawe or Ghanzi, depending where to beneficiate, and at Ghanzi load 'supa scrap' for transport to Namibia or back to Selebi Phikwe



Other potential usage for high-grade magnetite in small scale start-up scenario

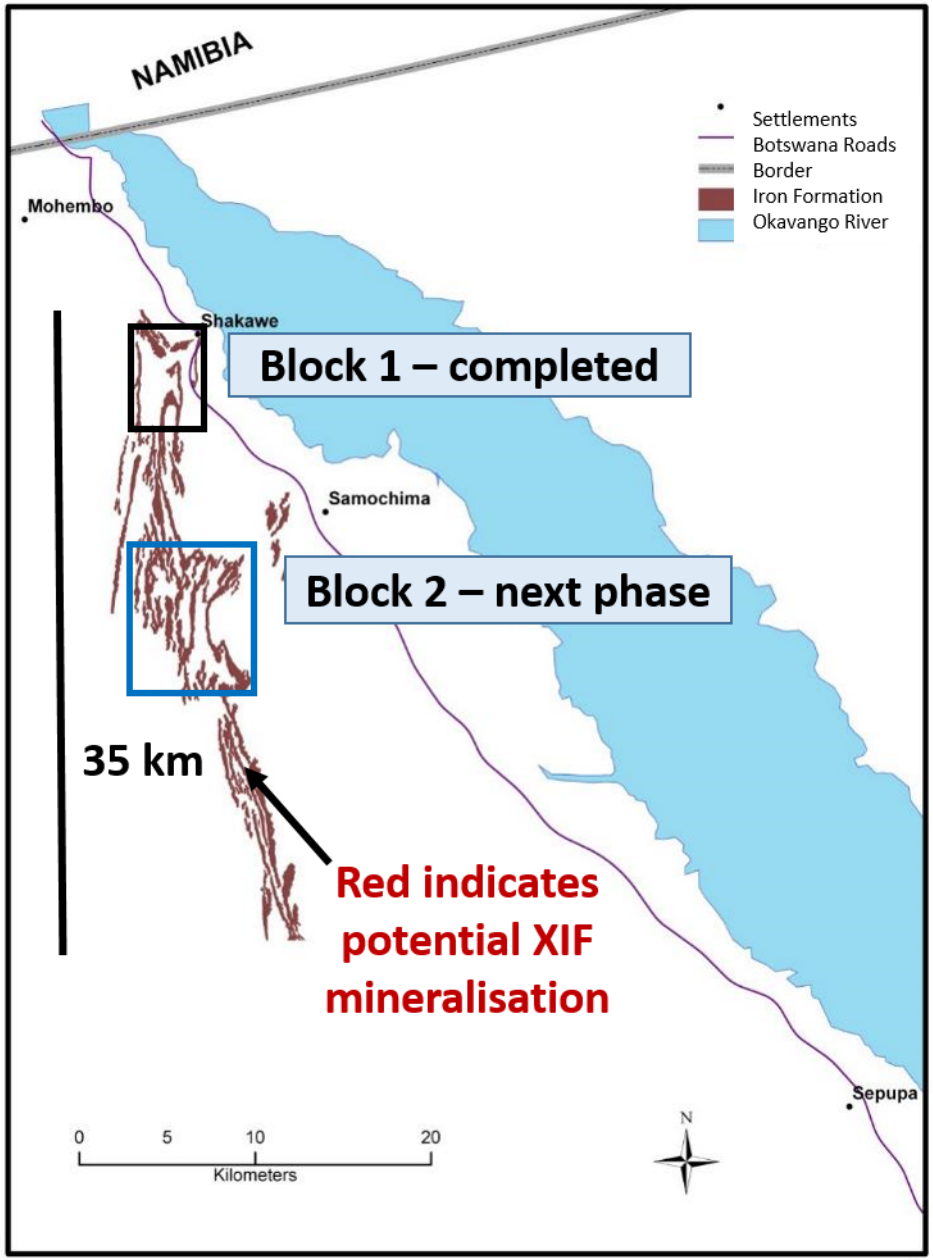
- Martin and Robson (South Africa) upgrades magnetite to super high grade for Dense Media Separation (DMS) for coal washing or heavy mineral separation.
- This requires high grade magnetite, such as that from XIF, with the following specifications:
  - 69.5% Fe,
  - less than 1.4% SiO_2,
  - Hematite less than 1%.
  - Low contaminants



XIF Summary - Potential Tier-1 mining project

- Maiden **NI 43-101** compliant mineral resource estimate of **Block 1** published
- Block 1 has an inferred resource of 441 Mt at Average Resource Grade = **29.4% Fe**
- All mineralized units capable of producing premium grade magnetite product of **>67% Fe**
- Exploration Target for the whole XIF belt is **5 to 7 Billion Tonnes** at 15-40% Fe
- Assessing options with SGS or similar

Bottom Line:

✓ <u>Major infrastructure project - possible **+50** year mine life</u>

✓ <u>Small Scale Start-Up Options being looked into</u>