

A photograph of a geological rock face, possibly a tunnel wall, with a grid overlay. A prominent curved orange line runs across the upper portion of the image. The rock surface is dark and textured, with some pinkish-purple mineral deposits visible. The text is overlaid in white, bold font.

**Underground mapping for better  
understanding of the geology and  
good mining practice**

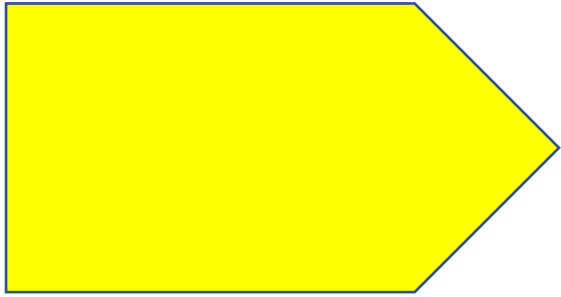
# Introduction:

Underground geological mapping is a key activity to guide the grade control by maximising value and reducing risk, support delivery of tonnes at an optimum grade to the mill, via the accurate definition of ore and waste.

It consists of data collection, integration and interpretation, local resource estimation, stope design, supervision of mining and stockpile management.

Underground mapping is for a better geological understanding of the ore body and good mining practice.

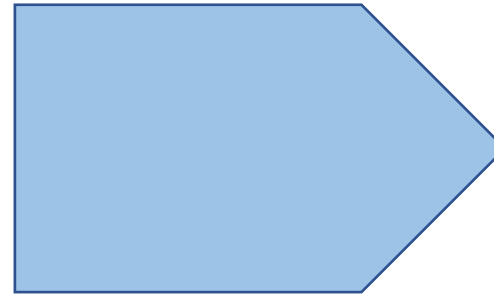
# Methodology



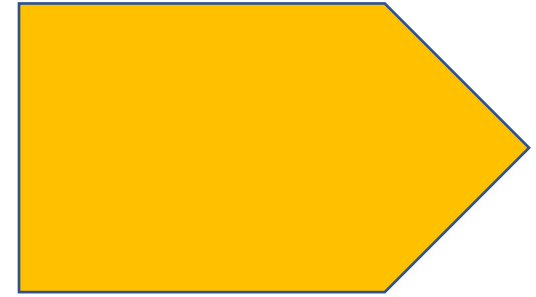
**Data  
collection/Under  
ground mapping  
and  
interpretation**



**Modelling  
Using Maptek  
Vulcan**



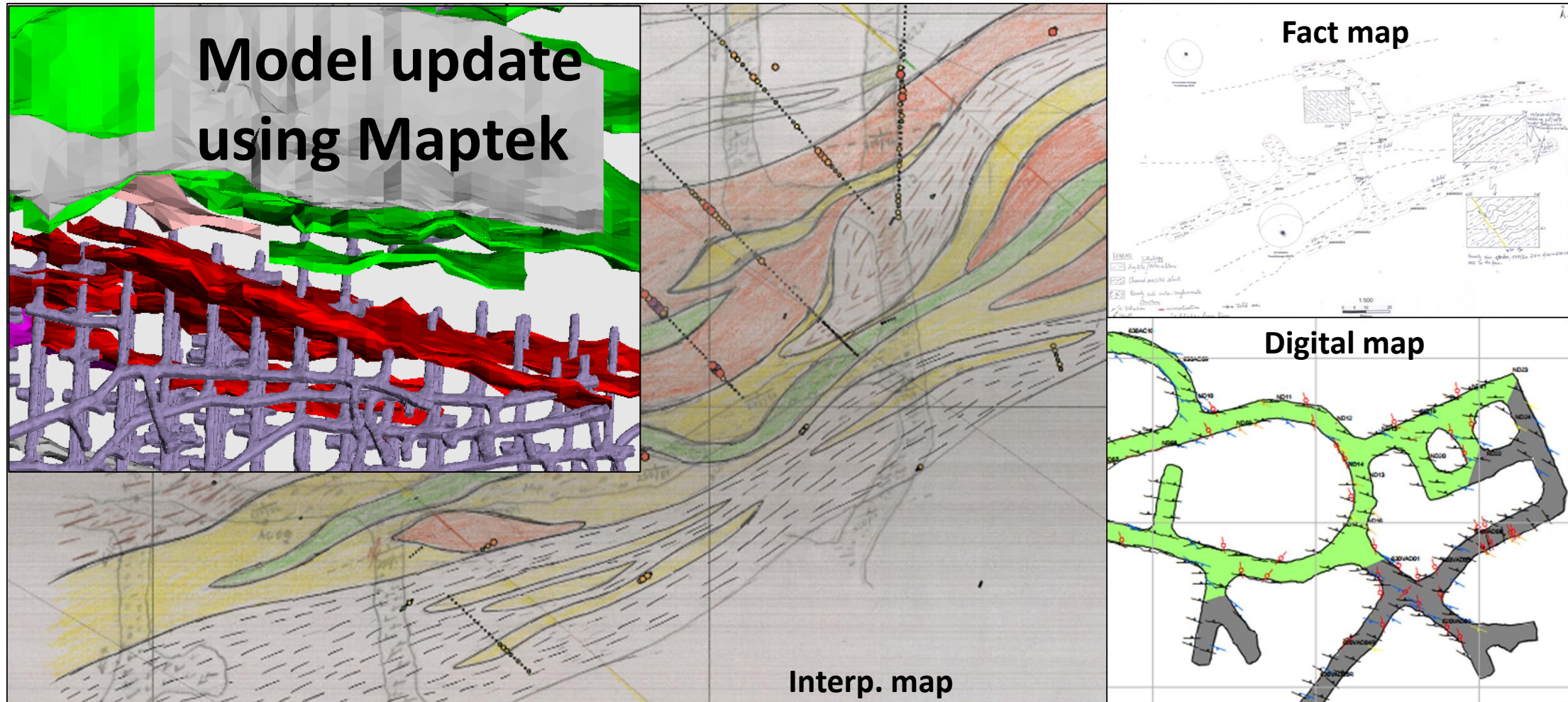
**Resource  
estimation**



**Mining to  
mill**



# Result and Analysis



- ❑ Fact maps (data collection) presents structure trend, structure events, rock types, alterations and mineral styles,
- ❑ Map interpretation integrate grade control holes and channel sampling; map to be geof.
- ❑ Level maps conducts to produce an accurate geological model and better control of ore mining and recovery.

# Conclusion

The following are the benefits of underground mapping;

- Accurate lithology and structure models for geological and geotechnical analysis,
- Accurate ore wireframe and block model for mining,
- Stope optimization
- Good mining practice by minimizing dilution into ore block
- Good ore stock pile management
- Good recovery after mining

# References and Bibliography

- ❑ Grade control geological mapping in underground gold vein operations
- ❑ <https://www.tandfonline.com/doi/abs/10.1179/1743275812Y.0000000019?journalCode=yaes20>
- ❑ Maptek Vulcan
- ❑ <https://www.maptek.com/products/vulcan/>

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