

## **Minutes of Meetings**

## Paul Furniss

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**From:** Marcus Birch <marcus.birch@orionminerals.com.au>  
**Sent:** Monday, August 6, 2018 9:40 AM  
**To:** Pieter Swart  
**Cc:** 'Kevin Mutheiwana'; Nelson Mosiapoa; Paul Furniss; Walter Shamu; Michelle Jenkins; japie@japievanzylprok.co.za; Deon Dempers; Kogi Govindsamy  
**Subject:** Orion Meeting - DMR  
  
**Importance:** High

Dear Mr Swart,

We would like to thank you for taking time to meet with us on Tuesday 31 July.

We appreciate your valuable advice regarding an alternative process to the proposed Vardocube Mining Right application. In the light of this we are reconsidering our options and may need to take you up on your offer to consult further with you and / or your relevant section heads.

We would like to confirm our invitation for you and your management team to visit the Prieska Zinc-Copper Project in Copperton at your earliest convenience.

You mentioned the earliest likely possibility for this would be in October. Kindly confirm what date(s) would suit you and your team so that we can lock something in.

To align with the DMR and Minerals Council focus on safety during the month of August, we will also be extending a separate invitation to Mr Dennis Sandman (Principle Inspector Mining) to visit the project site later this month to facilitate proactive engagement on this topic.

Regards  
Marcus

Marcus Birch  
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## Paul Furniss

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**From:** Paul Furniss  
**Sent:** Thursday, September 6, 2018 12:08 PM  
**To:** ntsundeni.ravhugoni@dmr.gov.za  
**Cc:** Johannes Nematatani  
**Subject:** Prieska Zinc Copper Project (Vardocube Section): Pre-Application Discussion 7 August 2018

Hi Ntsundeni

Our discussion at your offices on 7 August 2018 regarding the application process for environmental authorisation for mining by Vardocube (Pty) Ltd. refers.

My apologies for only sending this through now - below are the main points which I recorded from our discussion.

1. The NEMA Amendment Process only allows for an Environmental Authorisation to be amended where there are no new listed activities applicable.
2. The current Environmental Authorisation for Vardocube is limited to prospecting and does not include the listed activity for mining. Mining of Vardocube would therefore constitute a listed activity which has not been authorised.
3. A NEMA Amendment Process to incorporate Vardocube into the Repli Environmental Authorisation would only be possible if both Repli and Vardocube had an Environmental Authorisation in place covering all the listed activities applicable to both.
4. Environmental Authorisation for mining of Vardocube must therefore first be obtained.
5. This can be done either through an application for Environmental Authorisation as part of an application for a Mining Right or as part of an application for a Section 102 Amendment. (An application for Environmental Authorisation for the mining listed activity cannot be submitted without reference to a submitted mining-related application).
6. Regardless of the type of the mining application (mining right or section 102), since the mining listed activity is within Listing Notice 2 of the EIA Regulations (2014, as amended), the application must be subjected to the full scoping and EIA Process.
7. If done as part of a Mining Right Application, the process will be exactly as has been followed for the Repli Mining Right Application.
8. If done as part of a Section 102 Application, the application for Environmental Authorisation would have to be submitted at the same time as the Section 102 Application and both could only be submitted after the Repli Mining Right has been granted.
9. The Section 102 Application will only be processed once the scoping and EIA Process has been completed and the Environmental Authorisation granted.

Please let me know if I missed anything.

Thanks and regards  
Paul



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## MINUTES OF MEETING

### Key Stakeholder Meeting: Environmental Authorisation Process for the Prieska Zinc Copper Project (Vardocube Section)

<b>Date</b>	26 October 2018	<b>Location</b>	Terramanazi Office 1 Westlake Dr Westlake Cape Town
<b>Project</b>	Prieska Zinc Copper Project (Vardocube Section)		
<b>Time</b>	11:00		
<b>Attendees</b>	Fabio Venturi (FV) – Terramanazi Richard Summers (RS) – Richard Summers Incorporated Attorneys Marcus Birch (MB) – Orion Minerals Paul Furniss (PF) – ABS Africa Chané Pretorius (CP) – ABS Africa	<b>Apologies</b>	None

#### Discussion Items:

#### **1. Welcome and Introduction**

- 1.1. FV opened the meeting, and all introduced themselves.
- 1.2. Terramanazi and Richard Summers Incorporated Attorneys represent the Copperton Wind Farm (Pty) Ltd.
- 1.3. Orion Minerals (Orion) is a mineral exploration company with a joint-listing on the Australian and Johannesburg Stock Exchanges. The company has several prospecting rights in the Northern Cape Province which it is investigating.
- 1.4. Orion, through its subsidiary companies Repli Trading No. 27 (Pty) Ltd. and Vardocube (Pty) Ltd. are presently conducting two environmental authorisation application processes for the Prieska Zinc Copper Project.
- 1.5. ABS Africa is the appointed Environmental Assessment Practitioner for the Scoping and Environmental Impact Reporting (S&EIR) Processes associated with these Mining Right Applications (MRAs).
- 1.6. The Final EIR and EMPr for the Repli Trading No. 27 application has been submitted to the DMR for decision-making. The Draft Scoping Report for the Vardocube (Pty) Ltd. application has been distributed for public review and comment.

#### **2. Purpose of the Meeting**

- 2.1. FV explained that the purpose of the meeting was to discuss concerns related to the impact of the proposed mining project on the Copperton Wind Farm. It was noted that significant investment had been made with respect to the Copperton Wind Farm and the owners were concerned that the proposed mining would negatively impact on the operations of the wind farm facility.

### 3. Background

- 3.1. MB provided a background to Orion Minerals and its mineral deposit interests in the Northern Cape. A copy of the latest investor presentation was made available. A substantial drilling programme has been completed in the last year to confirm the characteristics of the deposit of interest within the Repli Trading No. 27 and Vardocube prospecting right areas.
- 3.2. An overview of the status of the EIA processes for Repli Trading No. 27 and Vardocube was provided. A copy of the overview presentation is attached to these minutes.
- 3.3. A summary was provided of the proposed surface and underground mining and the type of infrastructure that would be required to be constructed on site to support the mining and mineral ore processing. In terms of the intended open pit mining, MB noted that the open pit is scheduled to commence after the underground mining has been completed.
- 3.4. The current area of interest for the underground mining associated with the Vardocube application was discussed and it was noted that the Copperton Wind Farm was approximately 6 km from this area. PF noted that the entire Portion 1 of the Farm Vogelstruisbult 104 was included in the Vardocube MRA and application for Environmental Authorisation as this corresponded with the area in the Vardocube prospecting right.
- 3.5. It was confirmed that if mining was to be undertaken elsewhere on Portion 1 of the Farm Vogelstruisbult 104, that this mining activity would require a new application to be submitted to the DMR. The type of application would depend on whether a new listed activity was applicable or not.
- 3.6. MB indicated that there will be ongoing prospecting activity on the Vogelstruisbult property, in accordance with the Vardocube prospecting right. Initial results indicate that mineral deposits of interest are not in the area nearest to the Copperton Wind Farm. MB confirmed that discussions will be held with the Copperton Wind Farm should any mineral resources deposits be located within close proximity to the facility.
- 3.7. Water requirements for the mine will be obtained from the existing bulk water pipeline from Prieska. An agreement has been signed with the Siyathemba Local Municipality in this regard.
- 3.8. FV explained that construction of the access road to the Copperton Wind Farm development site is imminent and will start once the relevant biodiversity permits have been granted. The access road is required for the heavy load vehicles required to deliver the wind turbines. The construction phase of the Copperton Wind Farm is estimated to be 36 months.

### 4. Discussion

- 4.1. FV noted the concern that impacts of mining specific to the Copperton Wind Farm had not been assessed in the EIR. These were specifically noted to be the impact of dust on turbines, impact of blasting, vibration and air blast on turbine structures, impact of mine seismic events on turbine structures and the impact of mine traffic during the construction phase of the wind farm.
- 4.2. PF explained that the EIA had assessed the mine impacts on all surrounding land users. This included all surrounding renewable energy projects which had been issued with an environmental authorisation, regardless of whether they were operating or still proposed. The Copperton Wind Farm was identified as one of these and is shown on the surrounding landowners map. All surrounding land users were included in the various specialist studies, including the blasting study, air quality impact study and traffic impact study which were undertaken to inform the EIA process.
- 4.3. It was explained that a dust monitoring network had been established in October 2017 in order to record baseline dust levels in the area. The air quality study had used this information in the predictive modelling of dustfall from the construction and operational phases of the mine development. The air quality study indicates

that the mine will have an impact on the baseline dustfall levels but the modelled impact area is confined to hundreds of metres from the mine activities. With the Copperton Wind Farm situated approximately 6 km to the east, no dustfall impact on the facility is anticipated.

- 4.4. PF noted that a blasting impact study had been included in the Final EIR for the Repli Trading No. 27 application. This study had concluded that based on the calculations performed and measured against the applicable international standards, there was unlikely to be any vibration or air blast impact even for the nearest structures (hundreds of metres) to the mining area.
- 4.5. The most significant impact identified in the blasting impact study was that of fly rock. The specialist study indicated that the impact area for fly rock was up to 1 km from the mine. It is therefore of no significance for the Copperton Wind Farm structures.
- 4.6. Discussion was held regarding the potential for mine subsidence, tremors and/or mine-related seismic events and the impact extent of such an event. MB noted that the mine plan involves backfilling of voids as part of the mining operation and this would assist in stabilising the mine. In addition, the sinkholes that formed historically were due to mining of the crown pillar and no new subsidence has occurred since the mine closed in the early 1990s. Notwithstanding this, it was agreed that additional information on this would be requested from the relevant mine design engineers and that this information would be communicated.
- 4.7. FV raised concern over the high impact significance noted in the traffic impact assessment. PF explained that the risk related to a road safety impact. The level of use of the road infrastructure was noted in the traffic assessment to be very low. To mitigate the road safety impact, the specialist had recommended the need for dedicated turning lanes for mine traffic at several intersections on the road that branches off the R357 to Copperton. This is under consideration by the infrastructure design engineers.
- 4.8. Some discussion was held over the respective housing requirements for the mine and the Copperton Wind Farm. MB explained that meetings are being held with the municipality to initially establish a construction camp in Prieska which will be developed into a more permanent housing solution. FV mentioned that a construction camp is going to be established on the Copperton Wind Farm development site by the contractor responsible for the civil works. Similar to the mine's plan, most labour will commute daily from Prieska to the wind farm site.
- 4.9. It was noted that the proposed access road to the Copperton Wind Farm will be used for both the construction and operational phase of the facility.
- 4.10. The proposed access road intersects the historical diversion berm which was established in the 1970s to prevent flooding of the mine. As part of the Prieska Zinc Copper Project sections of the berm are to be reinstated to ensure the safe operations of the mine. It was agreed that engagement between the parties would be needed to coordinate the berm reinstatement / road construction works at this section.
- 4.11. FV agreed to obtain and send MB the design drawings of the proposed access road at the crossing of the berm area.
- 4.12. Engagement between the parties was also agreed to be necessary in terms of work to be done at the Cuprum Substation.
- 4.13. FV asked if stakeholders in the community had been engaged as part of determining the need and desirability of the mine. It was indicated that Orion had developed and agreed its Social and Labour Plan commitments with the Siyathemba Local Municipality and that various community development initiatives were already underway. Orion has also established an office in Prieska to facilitate communication with the community. The company also holds community engagement events in Copperton from time to time. This information was provided to ABS Africa and was included in the determination of the project's need and desirability as well as in the record of public participation.

- 4.14. Brief discussion was held over the requirements of the SRAO with respect to developments which may have an impact on the SKA Project.

## 5. Closure

- 5.1. It was agreed that it would be beneficial for the representatives of the Copperton Wind Farm and the Prieska Zinc Copper Project to continue to engage and resolve identified concerns to the mutual benefit of both developments.
- 5.2. MB advised that Orion would be holding its next community engagement meeting within the next week. FV asked if MB would include the Copperton Wind Farm site manager in the notification of such events. FV to provide contact details to MB.
- 5.3. RS indicated that the concerns of the Copperton Wind Farm had not been placed on record in the Repli Trading No. 27 application. Accordingly, comments on both the Repli Trading No. 27 application and the Vardocube application would be submitted in due course.
- 5.4. It was agreed that the minutes of the meeting would be included in the public participation record of the Vardocube application.
- 5.5. All participants were thanked for the opportunity to meet and the meeting was closed.

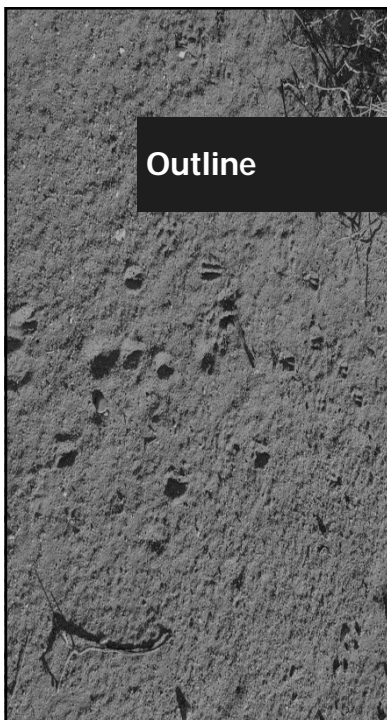




Prieska Zinc Copper Project  
Overview of Environmental Permitting



Cape Town, 26 October 2018



**Outline**



- **Project Overview**
- **EIA Process Overview**
- **I&AP Issues Overview**
- **Key EIA Findings**
- **Comments, Discussion and Way Forward**

**Purpose of Meeting**



- Provide an overview of the EIA Process undertaken
- Summarise main issues identified by I&APs
- Highlight key findings from the EIR / EMPr

Project Overview



### Project Overview



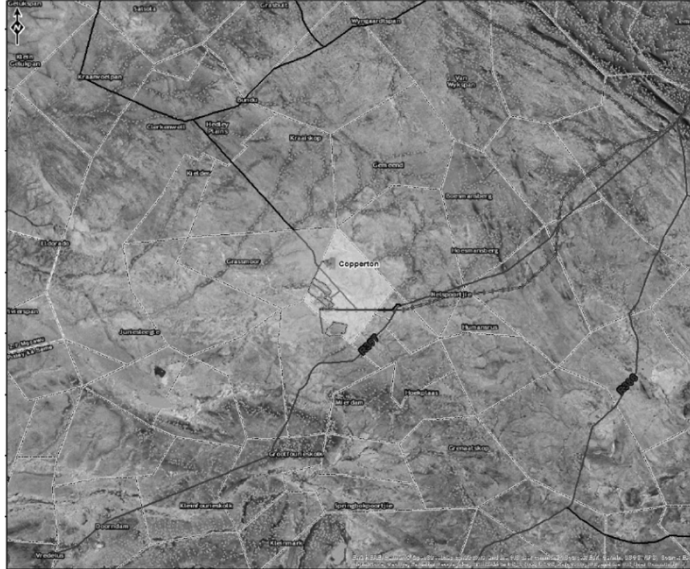
- PCM was owned and operated by Prieska Copper Mine Limited (PCML) a subsidiary of Anglovaal between 1971 and 1991
- A conditional closure certificate was issued in 1995
- Repli Trading No. 27 Pty Ltd (The Applicant) is seeking to establish mining operations centred at the PCM
- Surface and underground mining
- Production of a zinc and copper concentrate
- Estimated 14 year LOM
- Bankable Feasibility Study currently underway

### Project Overview (contd.)

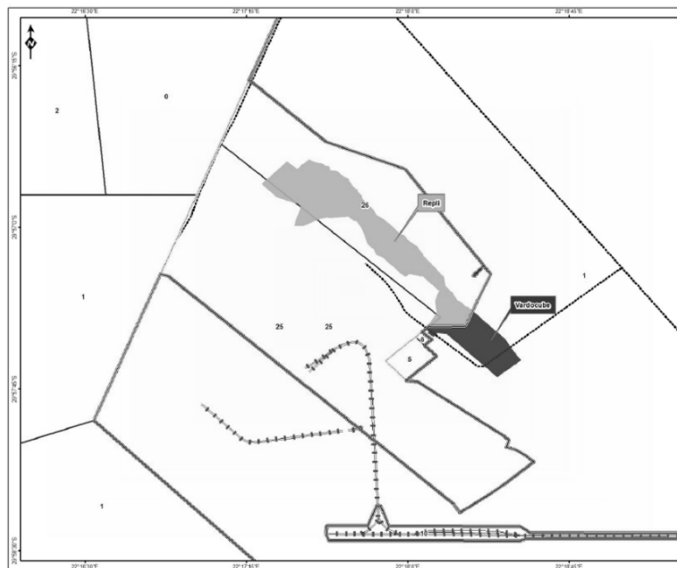


- Surface mining on Portion 26 of Vogelstruisbult 104 for 1 to 2 years
- Underground mining of the deeper portions of the Copperton Deposit on Portion 25 of Vogelstruisbult 104 and Portion 1 of Vogelstruisbult 104 (Vardocube Section)
- The oxide and deep sulphide ore will be processed on site
- Dewatering of the mine (8.5 million m<sup>3</sup>)
- Establishment of various ancillary mine support infrastructure
- Establishment of mine residue stockpile facilities, comprising of a new TSF and waste rock dump
- Accommodation of personnel during the construction and operational phase in Prieska and Copperton

**Project Location**



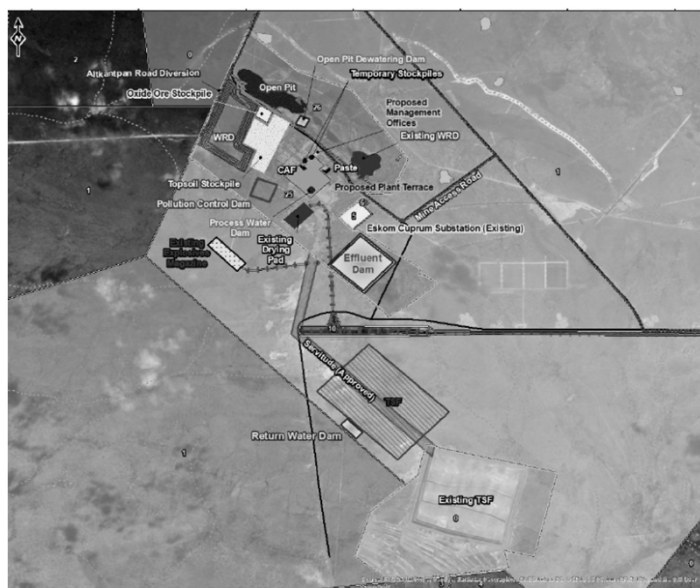
**Project Location – Repli and Vardocube Orebody**

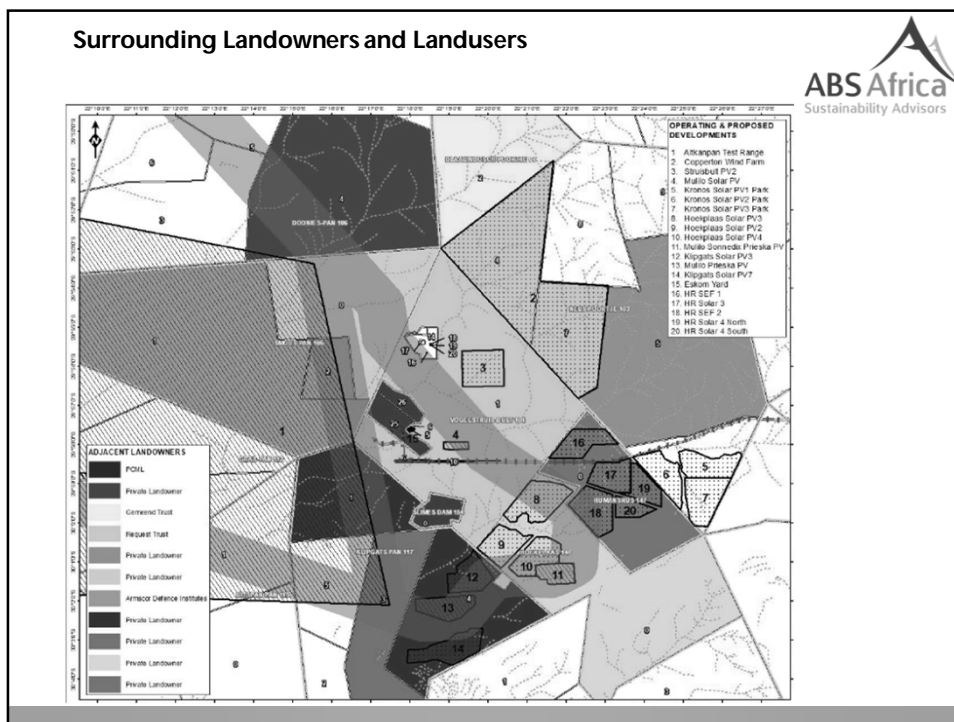


### Site Layout Options and Environmental Sensitivity Plan




### Site Layout






## EIA Process Overview


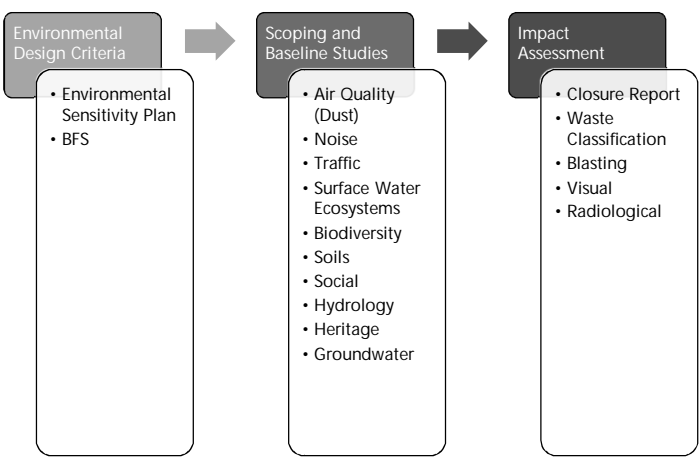


**EIA Process Overview**



1. Repli Authorisations / licences
  - NEMA Environmental Authorisation (Listing Notice 2)
  - NEMWA Waste Management Licence
  - NWA Integrated Water Use Licence
  - S&EIR Process
  - Final EIR Submitted 17 September 2018
  
2. Vardocube Section Authorisations / licences
  - NEMA Environmental Authorisation (Listing Notice 2)
  - S&EIR Process
  - Draft Scoping Report under review – comment period closes 29 October 2018

**EIA Process Overview (contd.)**

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    graph LR
      A[Environmental Design Criteria] --> B[Scoping and Baseline Studies]
      B --> C[Impact Assessment]
  
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The flowchart illustrates the EIA process in three sequential stages:

- Environmental Design Criteria**
  - Environmental Sensitivity Plan
  - BFS
- Scoping and Baseline Studies**
  - Air Quality (Dust)
  - Noise
  - Traffic
  - Surface Water Ecosystems
  - Biodiversity
  - Soils
  - Social
  - Hydrology
  - Heritage
  - Groundwater
- Impact Assessment**
  - Closure Report
  - Waste Classification
  - Blasting
  - Visual
  - Radiological

**EIA Process Overview (contd.)  
Public Participation**

- Site Notices
- Newspaper Notices
- Letters (e-mail)
- Telephone
- Placement of draft SR and EIR at 5 locations (Prieska x 2, Copperton, Marydale and Niekerkshoop)
- Website
- Focus Group Meetings

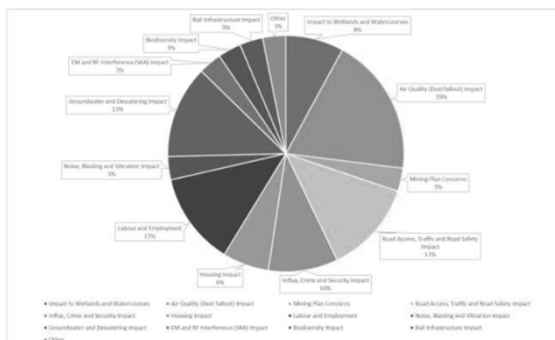


I&AP Issues



### Summary of I&AP Issues

- Concerns with respect to air quality (19%)
- Road and traffic safety (13%)
- Employment and labour (13%)
- Dewatering and the impact this may have on groundwater resources (13%)



### Key EIA Findings

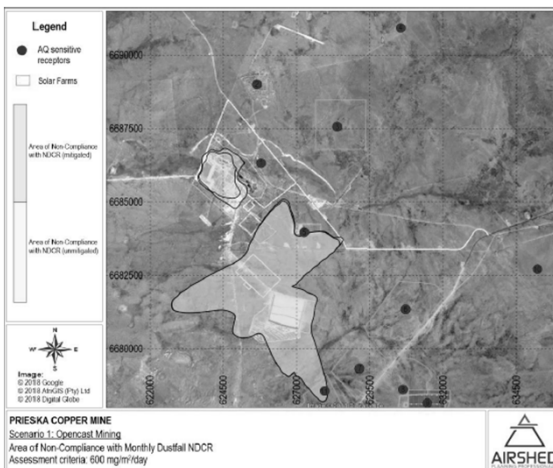
- Simulated impacts to air quality
- Groundwater model
- Impact to MeerKAT / SKA Observatory
- Socio-economic impacts



**Key EIA Findings  
Air Quality  
Dustfall - Mitigated**

- Simulated increase from baseline levels
- Mostly due to TSFs (conservative modelling – no mitigation)
- Compliance against the NDCRs for residential and non-residential areas
- Possible non-compliance against residential standard at AQSR#5 and 11
- Ongoing monitoring required to inform the need for additional mitigation

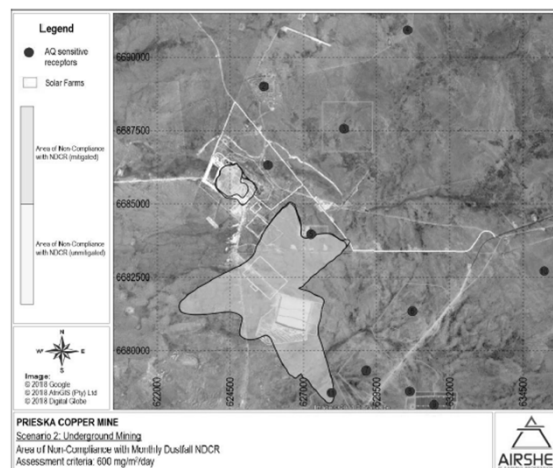
**Open Pit Mining**



**Key EIA Findings  
Air Quality  
Dustfall - Mitigated**

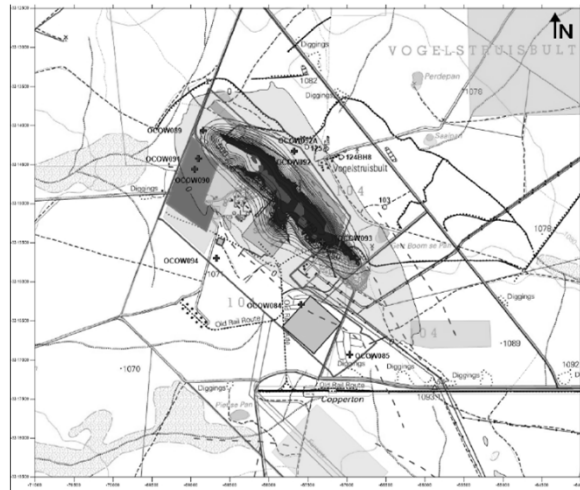
- Simulated increase from baseline levels
- Mostly due to TSFs (conservative modelling – no mitigation)
- Compliance against the NDCRs for residential and non-residential areas
- Possible non-compliance against residential standard at AQSR#5 and 11
- Ongoing monitoring required to inform the need for additional mitigation

**Underground Mining**



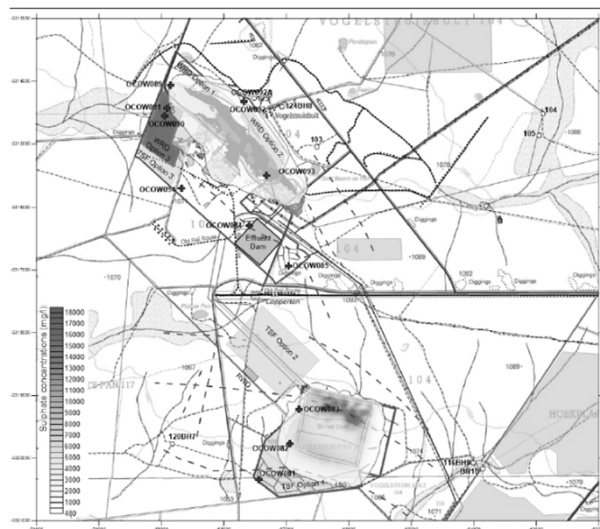
**Key EIA Findings  
Groundwater  
Dewatering**

- Simulated cone of depression 600 m east and west of underground mine area and up to 1.2 km south-east
- 2 private boreholes close to simulated edge of cone of depression
- Ongoing monitoring required to inform the need for additional mitigation



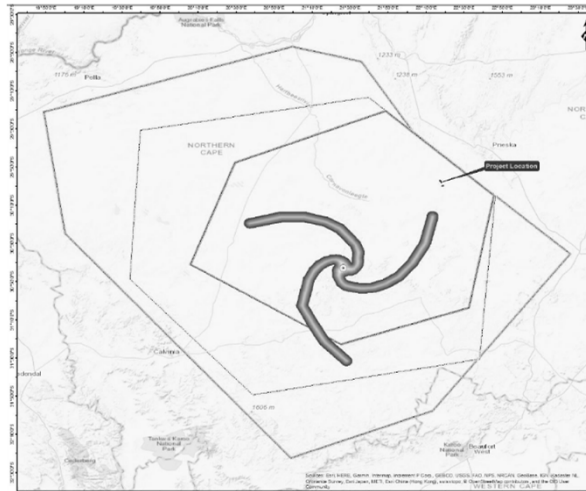
**Key EIA Findings  
Groundwater  
Quality**

- Regional water quality poor
- Hydrocensus (32 boreholes) indicated no potable use
- Suspected existing impact from historical TSF (unlined)
- To be managed through historical PCM closure commitments
- No private boreholes within simulated SO4 plume



### Key EIA Findings MeerKAT / SKA EM and RF Interference

- Engineering studies currently underway to determine compliance levels and mitigation needed
- Ongoing engagement between applicant and SARAO
- SARAO conditions included in EIR



### Key EIA Findings Socio-Economic Impacts

- Significant employment and economic development opportunities
- The mine social and labour plan has provided costed plans for optimising local employment, skills development and a commitment to implementing seven local economic development projects identified in collaboration with the SLM
- Several negative social impacts (e.g. influx, access to services, community safety) need to be managed



Comments, Discussion and  
Way Forward