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Date: 20 July 2026
Our Ref: 4988 ML133 Erongo Region, Namibia

Attention: Carlene Baufedlt,

TRANSPORT IMPACT STATEMENT FOR THE EXPLORATION PHASE OF MINING LICENCE (ML) 133, ERONGO REGION, NAMIBIA

1 INTRODUCTION

This statement summarises an investigation of transport impacts, expected as part of the **exploration phase** for the proposed Mining Licence (ML)133 development, in the Erongo Region, Namibia. The exploration phase will be undertaken to determine the extent of the expected future production through the mineral resource and geological investigations. The exploration phase is expected to generate relatively low traffic volumes and should therefore have a very low overall impact. The purpose of this investigation is to assess the expected transport impacts and road safety considerations, associated with this exploration phase only.

Should the exploration confirm the feasibility of proceeding with the mining operations, the project will progress to the construction-, operational- and ultimately the decommissioning phases. These subsequent phases would likely generate higher traffic volumes and will require a Transport Impact Assessment (TIA) as part of future planning- and environmental review/approval processes.

2 LOCALITY

The proposed ML133 mine development is located within the Nainais Tsiseb Conservancy, approximately 45 km southeast of Uis and 40 km southwest of Okombahe, in the Dâures Constituency of the Erongo Region. The site is situated north of the Omaruru River, which is a dry riverbed. Refer to **Figure 1** for a Locality Plan.

Figure 1: Locality Plan

Refer to **Figure 2** for the existing Exclusive Prospecting Licences (EPLs) surrounding the ML133 site. Based on this information, it is evident that the site is located within an established mining region, and the road network in this area currently accommodates mine-related traffic. In the future, if it is determined that this mine will be feasible and it becomes operational, additional mine related traffic will be experienced along these study roads.

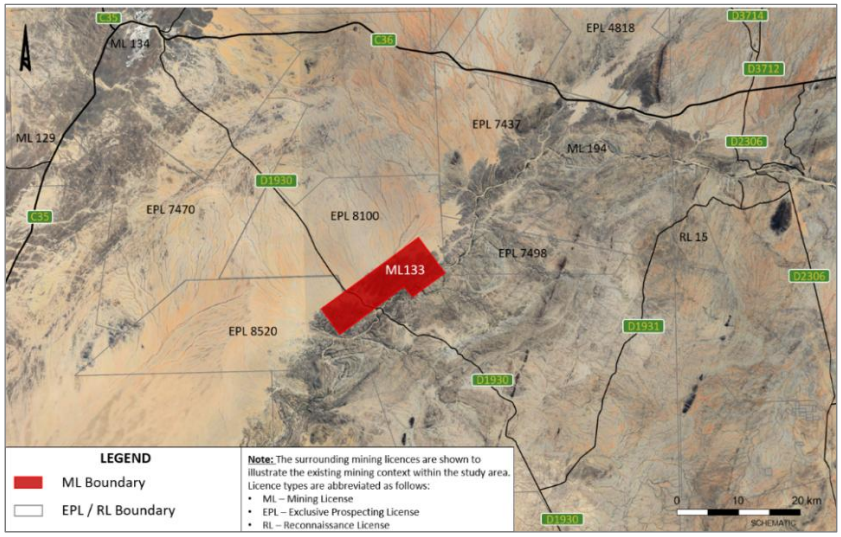

Figure 2: Location of the Proposed ML133 Relative to Surrounding Mining Licences

3 SURROUNDING ROAD NETWORK

The major roads in the site vicinity include:

- C36 Road – A rural major arterial classified as a Main Road. The gravel roadway consists of one lane per direction and has a posted speed limit of 100 km/h.
- C35 Road – A rural major arterial classified as a Main Road. The majority of the roadway consists of gravel with a posted speed limit of 100 km/h. A paved section extends from the C34/C35 intersection to approximately 35 km north of the intersection towards Uis. This section consists of one lane per direction with narrow shoulders and a posted speed limit of 120 km/h.
- D1930 Road – A rural minor arterial / District Road. The gravel road consists of one lane per direction with a posted speed limit of 80 km/h. This road crosses the ML133 development, as illustrated in **Figure 3** below.

Refer to **Figure 3** for the road hierarchy of the surrounding road network.

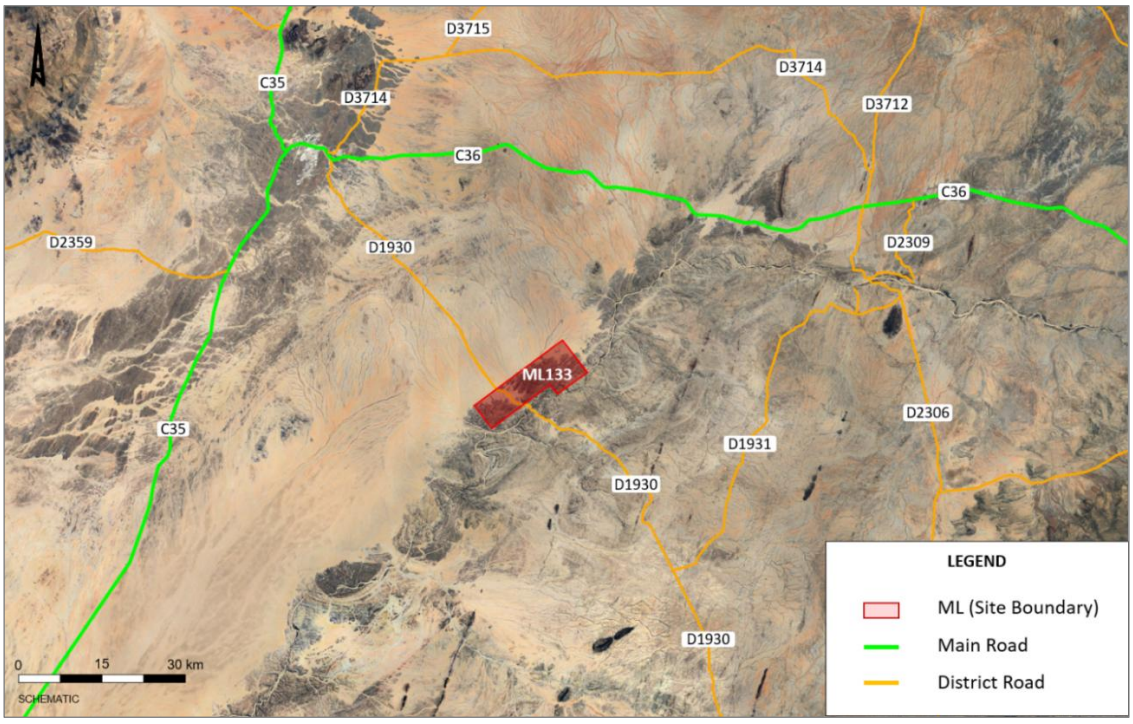

Figure 3: Surrounding Road Network – Road Hierarchy

4 LAND USE AND EXTENT

The proposed mining lease (ML) area has an extent of approximately 3 288 hectares (ha) and consists of the former Tin Tan Mine, which historically produced tin and tantalum. The site consists of existing buildings, but most of the site is currently undeveloped.

The proposed development will involve the exploration of the minerals, including lithium, tantalum and tin. Refer to **Figure 4** for the preliminary site plan of this proposed development. The proposed development will include two campsites to accommodate staff, two helipads and equipment to support the exploration activities. The site layout will be refined if this development proceeds to the construction- and operational phases.

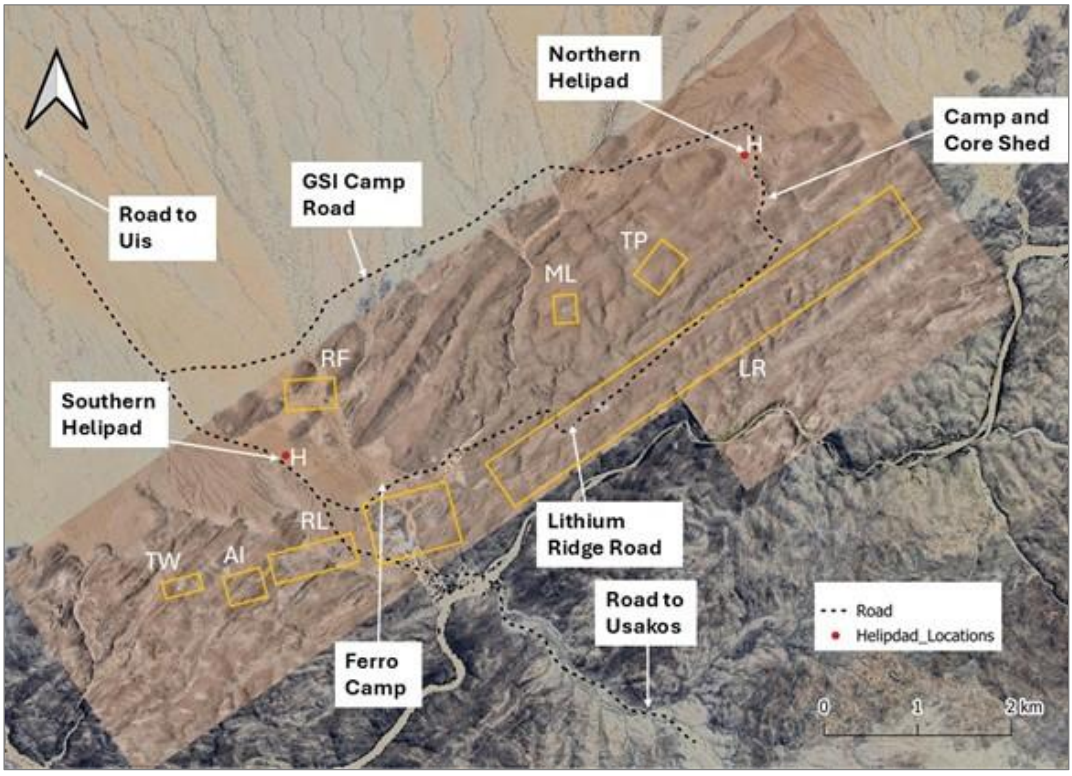

Figure 4: Site Plan of Proposed Mine Development

5 TRIP GENERATION

Trip generation estimates have been developed for the proposed exploration phase of the Tin, Lithium and Tantalum Mine on ML133. There are no published trip generation rates in either the Committee of Transport Officials (COTO) guidelines or the Institute of Transportation Engineers (ITE) Trip Generation Manual for mining developments, as traffic related to mine developments is dependent on the mineral being extracted, the scale of the operation, workforce requirements and the mining process.

As the project will only be in the exploration phase, the future mining operations and production output are not known at this stage. Therefore, the trip generation assessment is based on the exploration activities, which are expected to occur over a period of approximately three to five years.

5.1 STAFF TRIPS

The staff trip generation is based on the anticipated number of intermediate and senior personnel commuting to and from the site on a daily basis. The general workers and contractors are expected to be accommodated on a campsite within the site, therefore, reducing the external vehicle trips.

Based on the proposed organisational structure, approximately 53 employees are expected to be employed during the exploration phase. It is expected that 85% of the workforce will be accommodated on site, while the remaining 15% will commute daily from Uis using private vehicles. Based on the above assumptions as well as an average vehicle occupancy of 1.5 persons per vehicle, the estimated peak-hour staff trips are:

- 6 inbound vehicle trips – during the AM Peak Hour and
- 6 outbound vehicle trips – during the PM Peak Hour.

5.2 TRUCK TRIPS

During the exploration phase, water will be delivered to the site by heavy vehicles. It is anticipated that three (3) water trucks will deliver water to the site on a daily basis, resulting in six (6) two-way truck trips per day. It is assumed that 30% of these truck trips will occur during the peak hours. Based on this assumption, the peak hour truck trips are as follows:

- 1 in- and 1 outbound truck trip – during the AM Peak Hour and
- 1 in- and 1 outbound truck trip – during the PM Peak Hour.

5.3 TOTAL DRIVEWAY TRIPS

Based on the above assumptions, the total estimated peak-hour vehicle trips that will be generated during the exploration phase, are summarised in **Table 1** below.

Table 1: Trip Generation Total Driveway Trips

Land Use	Peak Hour	Trip Generation		
		Inbound	Outbound	Total
Tin, Lithium and Tantalum Mine	AM Peak	7	1	8
	PM Peak	1	7	8

Based on the above table, the planned exploration activities are expected to generate **eight (8) vehicle trips during the AM & PM peak hours.** In accordance with the Committee of Transport

Officials (COTO)[1] guidelines, developments generating fewer than 50 peak-hour vehicle trips are generally considered to have a negligible impact on the surrounding road network.

Accordingly, the proposed exploration phase is expected to have a **low to insignificant impact on the operation of the surrounding road network, and no traffic capacity constraints or operational issues are expected as a result of this planned ML133 development**. The existing road network is expected to accommodate the additional development trips without requiring capacity-related upgrades during the exploration phase.

In the future, if/when this development proceeds, it is recommended that a full transport impact assessment be undertaken to determine the transport-related impacts expected as part of these construction- and operational phases.

6 SITE ACCESS OPERATIONS

Refer to **Figure 5** for the two planned site accesses proposed for the mine development, which are located along D1930. These accesses are proposed about 30 km south of the C36/D1930 intersection and roughly 2 km apart.

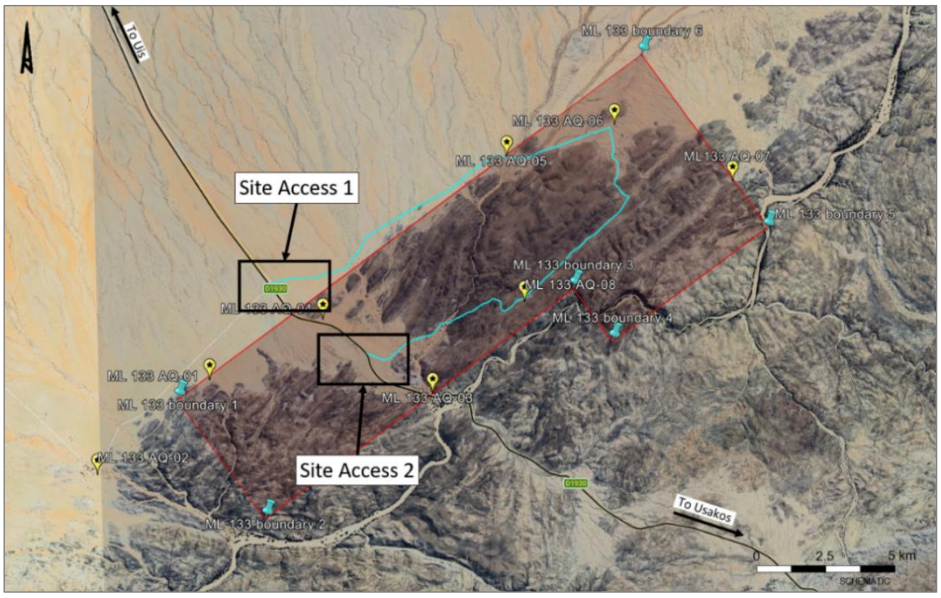

Figure 5: Proposed Site Accesses Along the D1930 Road

[1] Committee of Transport Officials (COTO), Technical Methods for Highways (TMH) 16, Volume 1, South African Traffic and Site Traffic Assessment Manual, Committee Draft 2.1, April 2021

Approach Angle of Access 2 along D1930 – In accordance with TRH17: Geometric Design of Rural Roads[2], a minor road should ideally intersect a major road at a 90° angle. Where this is not practical, the angle of intersection should not be less than 75°. Based on measurements obtained from the aerial imagery, Site Access 2 intersects the D1930 at an acute angle of approximately 35°, which is below the recommended minimum intersection angle. Hence, the intersection should be designed to comply with the minimum geometric design requirements by achieving a minimum intersection angle of 75° and maintaining safe turning movements for a design vehicle (single unit truck). Before the road is upgraded, a detailed design should be submitted to the relevant road authority for review and approval. **Figure 6** illustrates the existing acute intersection angle at Site Access 2.

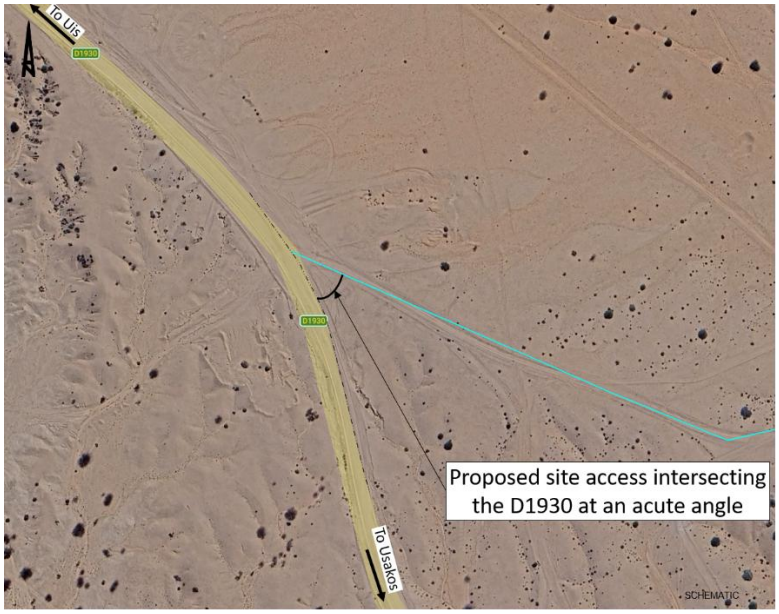

Figure 6: Acute Intersection Angle at Site Access 2

Horizontal Alignment - Shoulder Sight Distance (SSD) – The D1930 Road has a posted speed limit of 80 km/h. According to the Department of Transport TRH17: Geometric Design of Rural Roads[2], the minimum SSD required from a minor side road approach, along a main road should be a minimum of 180 metres for passenger vehicles and 240 metres for single-unit trucks. Based on the aerial imagery, the following observations were made regarding the existing available SSD at these proposed accesses:

- Site Access 1 – located along a relatively straight section of D1930. Hence, the Shoulder Sight Distances (SSD) should be acceptable from a horizontal road alignment point of view.

2 Department of Transport, Technical Recommendations for Highways (TRH17) Geometric Design of Rural Roads, 1988

- Site Access 2 – located along the outside of a horizontal curve along D1930. Hence, the SSD should be acceptable from a horizontal road alignment point of view.

Vertical Alignment SSD – According to the TRH17[2], a major road with an operating speed of 80km/h is considered to have a flat vertical alignment if the road gradient is 5% or less. Based on a review of the existing D1930 gradient at both site access/es site triangles and site observations, the gradient varies between 2% & 4%. This terrain is relatively flat for Site Access 1, while a gentle crest is present on the southern approach to Site Access 2. Based on photos that were taken on site, it seems as if the vegetation within the sight triangle on the southern approach to Site Access 2 may limit the available shoulder sight distance. It is therefore recommended that the vegetation within the sight triangle be cleared to maintain the required SSD. Once the vegetation is cleared, the existing vertical alignment should be acceptable. Refer to **Photo 1** and **Photo 2** below for the available SSD at Site Access 2.

Photo 1: Access 2 SSD of the Northbound Approach

Photo 2: Access 2 SSD of the Southbound Approach

Road Safety – to improve the operational safety at both site accesses, the following appropriate warning signs are recommended:

- Along the site access roads, on the approaches to the D1930 intersection:
  - Maintain the Stop Signs (R1),
  - Provide advance warning for the stop signs ahead (W302), placed about 120 meters back from these stop signs.
  - Provide advance warning sign for the skew T-junction (W206) of the approach intersecting the crossing road at an acute angle ahead, placed about 120 meters before the intersection, at access 2 only.
- Along D1930, at the approaches to the development access intersections:
  - Provide advance warning signs for the side-road T-junction to the left and right (W107/W108) at intersection 1.
  - Provide advance warning signs for the sharp junction for the side road to the left and right (W111/W114) at intersection 2.

All the abovementioned signs should be installed according to the SADC Road Traffic Signs Manual (SADC-RSTM, 2012)[3]. Refer to **Figures 7** and **8** for the concept layouts for the proposed placement of these warning road signs at both intersections.

Should the ML133 mine development proceed to the construction- and operational phases, the need for surfacing a portion of these site access intersections should be investigated. If warranted, approximately 100 m along each approach should be surfaced. The surfaced section should be routinely maintained by sweeping loose gravel from the roadway and maintaining adequate road marking and signage. This should improve the overall safety of these development accesses.

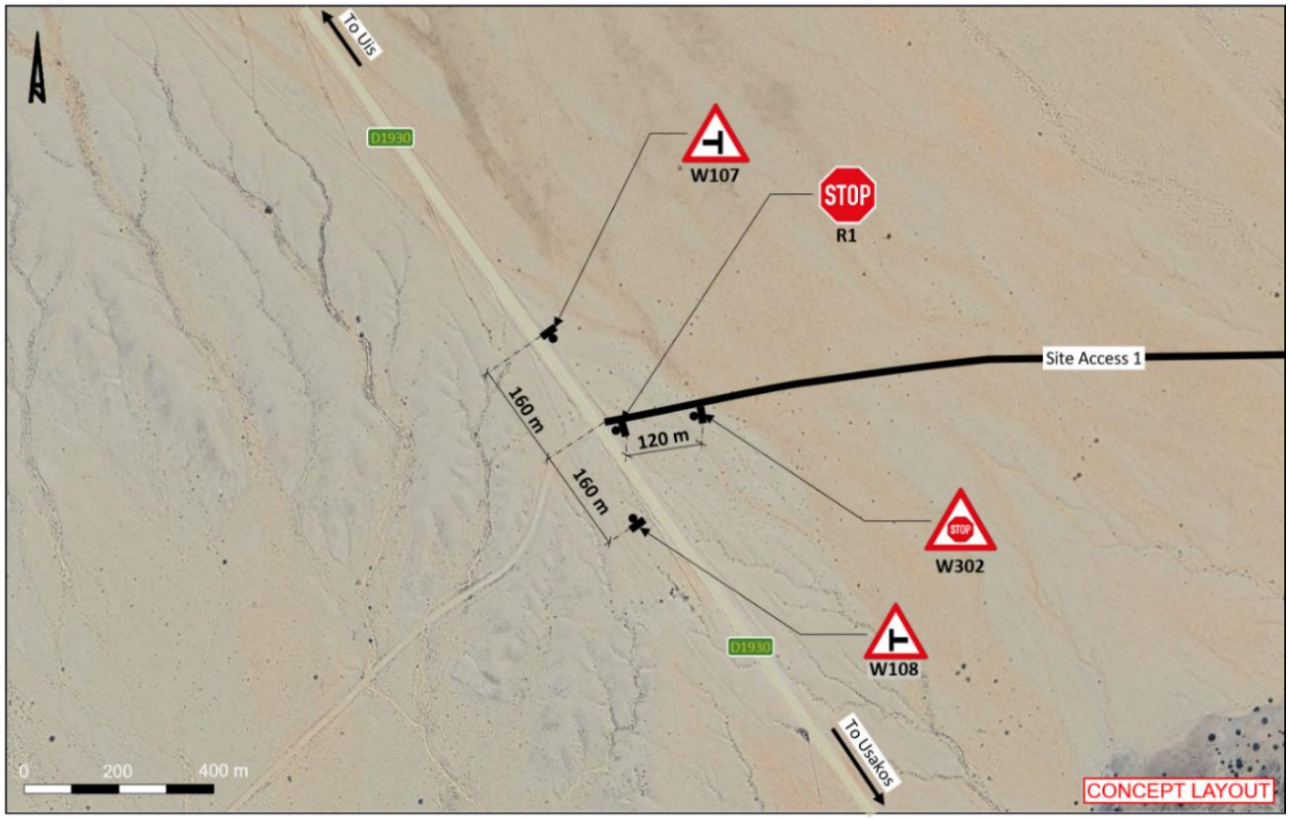

Figure 7: Proposed Placement of Signage at the D1930/Site Access 1 Intersection (1)

[3] Department of Transport, Sothern African Development Community Road Traffic Signs Manual, Volume 1, May 2012

Figure 8: Proposed Placement of Signage at the D1930/Site Access 2 Intersection (2)

7 CONCLUSION AND RECOMMENDATIONS

This statement summarises an investigation of the transport impacts expected as part of the planned **exploration phase** on Mining Licence (ML) 133, located in the Erongo Region, Namibia. The following can be concluded, based on the findings of this investigation:

- **Land Use and Extent** – The site covers about 3 288 ha and was previously used for a tin and tantalum mine. The proposed mine development will consist of campsites, helipads and equipment to support the exploration of minerals, Tin, Lithium, and Tantalum.
- **Trip Generation –** The exploration phase is expected to generate a maximum of eight (8) vehicle trips during both the AM and PM peak hours. Hence, this phase of the development will have a negligible impact on the surrounding road network.
- **Site Access Operations -** Two site accesses are proposed. To improve the operational safety of these site accesses, the following upgrades are recommended:
    - A detailed design should be undertaken to ensure that Site Access 2 achieves a minimum intersection angle of 75°, complies with the minimum geometric design requirements. The design should be reviewed and approved by the relevant road authority before implementation.

  - Shoulder Sight Distance – sufficient SSD should be available at Site Access 1. Vegetation within the sight triangle on the southern approach to Site Access 2 should be cleared and maintained to ensure that the required SSD is not limited.

- **Road Safety** – The following upgrades are recommended:
  - Along the site access roads: Maintain Stop Signs (R1) and install advance warning for the stop signs ahead (W302). An advance warning sign of the skew T-junction (W106) for an acute angle of intersection with the crossing road (D1930), at access 2 only.
  - Along D1930 at the site access approaches: install advance warning signs for the left- and right-side T-junctions (W107/W108) at Intersection 1 and the sharp left- and right-side junctions (W111/W114) at Intersection 2.

Based on this investigation, it is evident that the transport impacts of the planned **exploration phase** for the ML133 development should be negligible, and the existing road network would be able to accommodate the expected trips that are likely to be generated by this phase of the development. Hence, it is recommended that this development be considered for approval, from a transport point of view, provided that the safety upgrades recommended in this report are implemented.

Should the exploration phase confirm that the ML133 could be feasibly developed, it is recommended that a full Transport Impact Assessment (TIA) be undertaken as part of the construction- and operational phases of this development.

Hugo Engelbrecht
for Innovative Transport Solutions