

29 March 2022

Our Ref. No.: 22ENW01 – Noise

Enviroworks

Attention: Elana Mostert

COMPLIANCE STATEMENT – ENVIRONMENTAL NOISE– INZALO CRUSHING AND AGGREGATES – ERMELO - MPUMALANGA

Airshed Planning Professionals (Pty) Ltd was appointed by Enviroworks to provide an environmental noise compliance statement for the proposed Inzalo Crushing and Aggregates (Pty) Ltd stone aggregate and gravel mine on a portion of Portion 15 of Farm Rietspruit 437, IS, Msukaligwa Local Municipality, Mpumalanga Province. The proposed mining will take place on a 4.9 ha undisturbed area of the farm. The mining method will make use of blasting to loosen hard rock, whereafter material will be loaded and hauled to a crushing and screening plant. Different sized products will be transported off site with tipper trucks. The expected mining rate is 65 000 tonnes per month for double-shift operations and 40 000 tonnes per month for day shift operations only.

The mine location is approximately 4 km southwest of the town of Ermelo. Noise sensitive receptors within 5 km radius from the operations include scattered farmsteads and the southwestern suburbs of Ermelo (Figure 1). The closest schools are approximately 5 km to the northeast and east, with no clinics or hospitals within 5 km radius. The closest noise sensitive receptors are farmsteads 0.8 km to the northwest, 1.3 km to the east-northeast, 2.3 km to the southwest and 2.3 km to the west of the proposed operations.

The project is located in the highveld region of Mpumalanga, and land use surrounding the proposed project location is mainly grasslands and is therefore categorised as “absorbent” and provides attenuation of noise. The topography of the area is fairly flat, with no topographical features between the operations and the closest noise sensitive receptors. The wind field in the area is mainly from the northwestern sector during the day and from the northeastern sector during the night. Depending on the wind speed, environmental noise impacts are expected to be slightly more notable to the southeast and southwest of the operations during the day and night respectively. The area experiences fairly cold winters, with night-time temperatures dropping as low as -5°C (WRF data, 2018 to 2020). On a sunny day with no wind, temperature decreases with altitude and creates a ‘shadowing’ effect for sounds. On a clear night, temperatures may increase with altitude thereby ‘focusing’ sound on the ground surface. Noise impacts are therefore expected to be more notable during the night.

No national, provincial or municipal legislation has been published regulating environmental noise impacts, but South African National Standard (SANS) 10103 successfully addresses the way environmental noise measurements are taken and assessed in South Africa, and it is believed that when published, national noise standards will make extensive reference to SANS 10103. The SANS 10103 typical rating level for outdoor noise for rural areas is 45 dBA for daytime (06:00 to 22:00) and 35 dBA for night-time (22:00 to 06:00). SANS 10103 also provides a useful guideline for estimating community response to intruding noise, with an increase in noise levels from 0 to 5 dBA above baseline conditions unlikely to result in community action, an increase of 5 to 15 dBA likely to lead to medium reaction with widespread complaints and an increase greater than 15 dBA likely to result in a strong community action with vigorous community action.

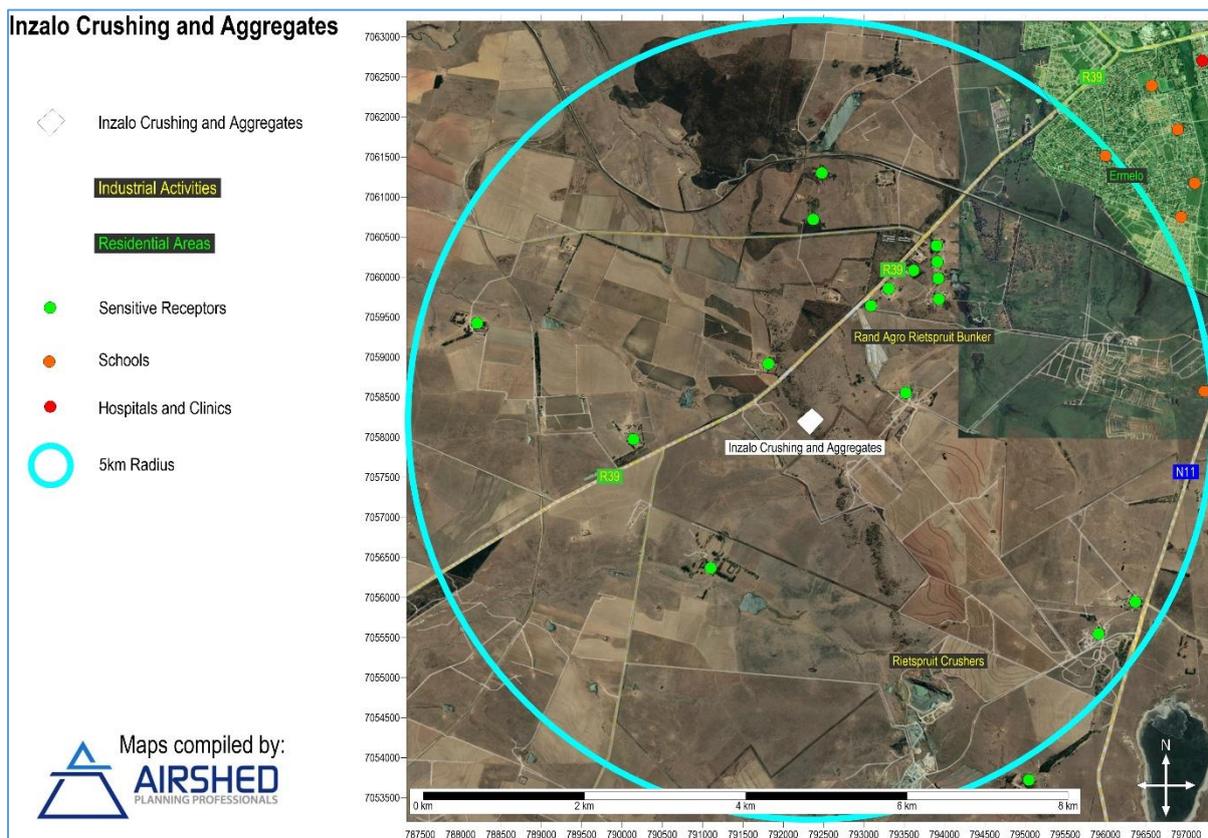


Figure 1: Project Location and Sensitive Receptors

Noise sources at the operations will include engine, exhaust and other mechanical noise from the on-site vehicle fleet, reverse hooters on the vehicle fleet, mechanical noise generated by mining, loading and unloading operations (“rockfall”), and mechanical noise generated by crushing, screening and conveying activities at the processing plant. The noise impact of mining operations rarely extends further than 3 km from the source, so impacts are only expected to occur at the closest sensitive receptor locations. Blasting will result in instantaneous high noise levels, but these are not expected to affect average noise levels in the area.

Given the scope of the operations, the fairly low mining, hauling and processing rates, the expected small vehicle fleet, the distance to nearby sensitive receptors as well as the wind field mainly from the north, it is unlikely that the proposed operations will result in significant detrimental impact on environmental noise for most of the study area. However, mining and processing activities are currently planned to be 24 hours per day, and noise generated by night-time operations are likely to be much more noticeable, given the typical low baseline noise levels in rural areas.

The increase in noise levels, given that baseline noise levels are likely to be very low due to types of activities in the area, could be noticeable and possibly disturbing at the two closest sensitive receptors: the farmstead to the northwest (on the opposite side of the R39 road) and the farmstead to the east-northeast (south of the Rand Agro Rietspruit bunker). It is recommended that a noise survey campaign be conducted at these two locations before activities commence to establish baseline noise levels, and then again once the mine and processing plant is fully operational to establish operational noise levels. Noise levels recorded during these sampling campaigns should be compared, and if an increase of greater than 3 dBA is noted, additional mitigation measures (either source based, receiver based, or both) should be considered. If night-time

noise levels recorded during operations are significantly higher (> 5 dBA) than baseline noise levels, night-time noise generating activities should be avoided.

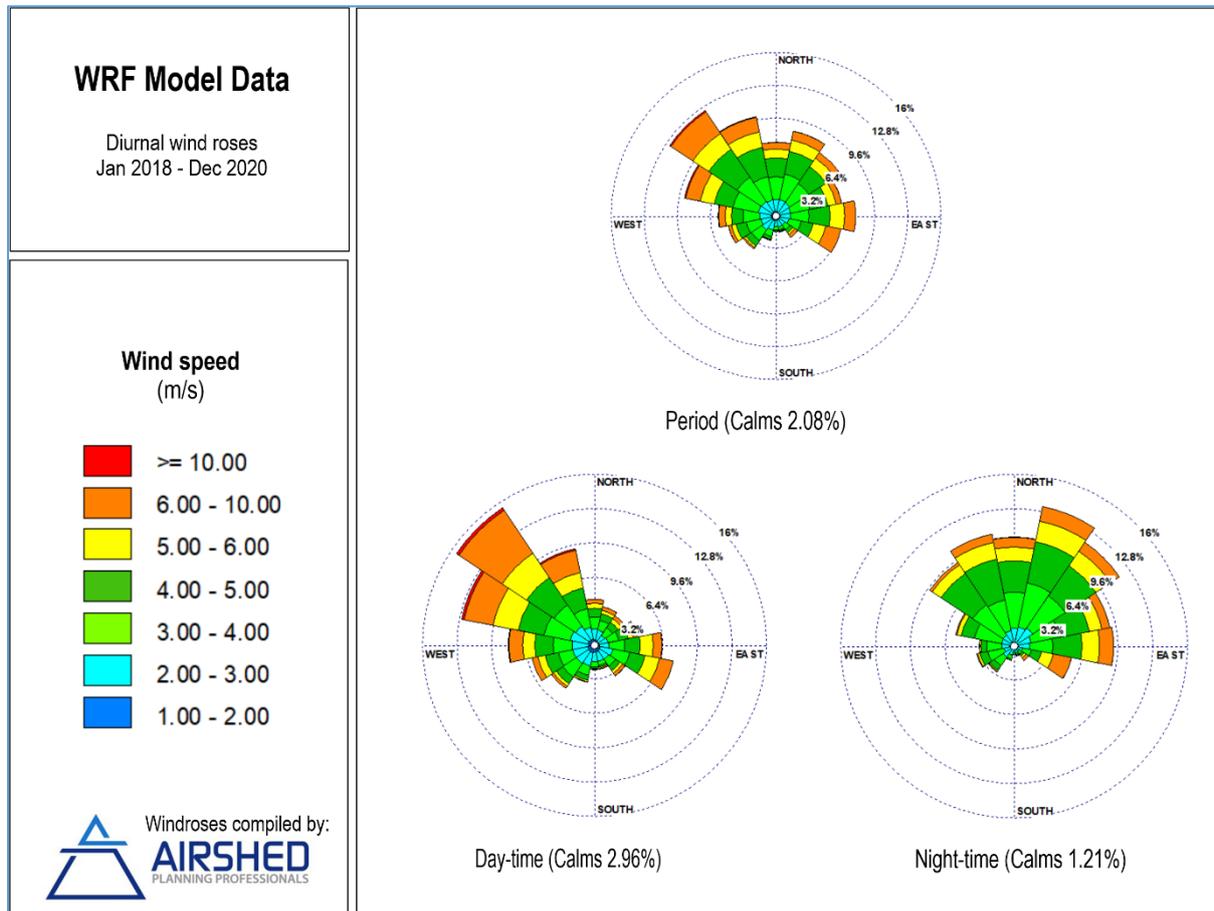


Figure 2: Seasonal Wind Field (Weather Research and Forecasting Model data – 2018 to 2020)

While noise generated by the activities are not expected to impact at any sensitive receptors except possibly at the two closest farmsteads, it is recommended that best practise mitigation and management measures be implemented to ensure minimal impact on the receiving environment. Recommended measures include regular maintenance and servicing of the vehicle fleet, avoidance of unnecessary vehicle idling times, maintenance of all road surfaces to avoid potholes and corrugations, minimising the need for vehicles to reverse (and thereby use of their reverse alarms), implementation of strict speed limits, enclosure of stationary noise sources such as compressors and pumps, and wherever possible, limiting noise generating activities to between 06:00 and 22:00.

In addition to the above, it is imperative that blasting schedules be communicated to all surrounding residents, and that a complaints register be in place and that all interested and affected parties be encouraged to report any noise related complaints.

If you have any questions, please do not hesitate to contact me.

Yours sincerely,

Nick Grobler

Senior Air Quality and Noise Specialist



