Gippsland Critical Minerals

Fingerboards Critical Minerals Project
Study Briefs - Radiation Assessment

Overview

The Project involves the extraction of zircon, ilmenite and monazite, minerals that can contain naturally occurring levels of radioactivity. The radiation assessment will provide a thorough, science-based evaluation of the existing conditions and what potential changes may occur to the air, land and water environments as a consequence of the mining, processing and transport of the various materials during construction, operation and closure of the Project. The assessment will make recommendations to allow clear communication and engagement with local communities and regulators on any radiological issues.

The study applies Australian (ARPANSA) and internationally recognised (ICRP and IAEA) standards, using modelling to evaluate potential impacts on human health and the environment. Comprehensive monitoring and risk controls will be identified to ensure any radiation remains well below accepted limits throughout the Project's life cycle.

Assessment Objectives

- Evaluate potential radiological impacts of mining on human health, agricultural land, water resources, and the local environment through all Project phases, including construction, operation, and closure.
- Provide advice to ensure compliance with Australian and international safety standards for radiation exposure (ARPANSA, ICRP, IAEA).
- Provide transparent findings and risk information for local stakeholders and regulatory agencies.

Preliminary Focus Areas

- **Baseline Radiation Survey -** Review and update of baseline conditions to define current radiological conditions using recent monitoring and historic records.
- **Public Health and Safety -** Assessment of radiation exposures to community members, landholders, and workers, and provide recommendations if necessary to ensure all scenarios remain well below regulatory dose limits.
- **Transport Risks -** Analyse any radiation risks associated with moving mineral concentrate by rail and provide management strategies to ensure transport safety.
- **Environmental Impacts -** Assessment includes the effects on non-human biota using Environmental Risk from Ionising Contaminants: Assessment and Management (ERICA) modelling.

- **Management and Mitigation -** Recommendations for specific operational controls and robust radiation management plans to ensure risks are controlled even under worst-case scenarios.

Specialist Consultant

DBH Radiation Pty Ltd is an Australian-based consultancy specialising in radiation safety, compliance, and health physics services. Founded in 2021 and led by Darren Billingsley, a health physicist with over three decades of experience. The company's services are in supporting projects to meet their regulatory and operational obligations and includes radiation safety training, compliance auditing, environmental radiation surveys and impact assessment, and the development of radiation management plans.

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