

JBS&G Mandena Community Radiation Study - Summary



JBS&G Findings

International environmental experts, JBS&G Australia Pty Ltd (JBS&G), have undertaken one of the most comprehensive radiation studies of its type between November 2019 and October 2022, which showed that there is no need for heightened health concerns around local radiation levels.

QMM's contribution to radiation dose within the community has been assessed and found to be far smaller than the variation in natural background radiation levels and below national and international regulatory limits for radiation.

The study involved collecting samples within surface water, groundwater, soil, sediment, land foods, aquatic foods, air and dust, and testing for radiation. More than 260 samples (including 377 individual fish) were collected under strict quality control conditions to ensure reliable and precise data.

Radiation

Radiation is a form of natural energy that comes from elements which are present in the environment and are part of the earth's natural systems. Radiation energy can be compared with other natural energy sources such as sound, light and heat.

Radiation comes from the sun and the ground, and is present in the air, soil, water and also from elements present within people and animals.

People and animals live safely with radiation in our world every day. It is absorbed through our skin, or by breathing, eating or drinking.

Natural radiation energy levels that interact with humans is called a "dose". The natural radiation in and around the QMM mine is a dose that is normal for people, animals and plants.

At QMM, the natural radiation environment includes mineral elements that were initially present in the mountains, but have been moved by nature (wind, rain, rivers and the ocean) and deposited broadly across the region on the ground and beneath the sand layers. Some of these mineral elements are mined by QMM as they are needed in industry for a variety of purposes.

Companies such as QMM that remove mineral elements that contain natural radiation must monitor to ensure that radiation levels are not increased by mining activity (mine contribution) above an established global reference level.

JBS&G study

JBS&G was engaged by QMM to undertake a community radiation study.

Five rounds of sampling were undertaken between 2019 and 2022 in a professional, scientific and quality assured way, with procedures followed and evidence recorded during each stage of the process.

Samples were shipped to Australia for analysis at one of the world's leading radiation laboratories, the Australian Nuclear Science and Technology Organisation (ANSTO).

Baseline study

In 2000, an independent specialist SENES consulting undertook a study, measuring radiation levels in the natural environment before mining began (the "baseline" study). The study took soil and water samples and measurements from within the area where the mine currently operates and the surrounding communities.

The JBS&G study data was compared where appropriate to the baseline study data to identify whether mining changed the radiation levels in the environment, and more importantly, comparison was made between the measured mine contribution level and the global established reference level.

Next steps

Radiation levels measured from soil, water, fruit, plants, fish and prawns are safe for people, animals and plants.

QMM will be required to continue to monitor radiation levels associated with its operations with the Government regulators, and will look for community participation in monitoring going forward.