

# International Conference on the Management of Naturally Occurring Radioactive Materials (NORM) in Industry

## VIRTUAL EVENT

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## Measurement of Radon Concentration in Groundwater and Surface Water in Yangon, Myanmar, Using RAD 7 Radon Detector

Radon is a naturally occurring radioactive gas which released by the natural radioactive decay of uranium in the ground. Radon can dissolve and build up in water from underground sources. Radon is the most important cause of lung cancer after smoking.

The purpose of this study is to investigate the radon concentration in groundwater and surface water in Yangon. Yangon is the capital of the Yangon Region and the largest city of Myanmar. With about 6 million people, Yangon is Myanmar's most populous city. The city is made up of 33 townships and the area is 730 km<sup>2</sup>. Water resources in Yangon are lakes, river, reservoirs and underground water. To study the radon concentration in water, groundwater samples were collected from wells and boreholes from various locations and surface water samples from lakes, river and reservoirs in Yangon area. Measurements of radon concentration in ground and surface water were performed at the Isotope Hydrology Laboratory of the Division of Atomic Energy by using RAD 7 radon detector connected to RAD H2O accessory which were provided by International Atomic Energy Agency (IAEA) through the national TC project "Establishment of the Infrastructure for the Application of Isotope Hydrology in Water Resources Management –MYA7006". RAD 7 is a portable electronic radon detector and its measurement is fast. The RAD H2O gives results after a 30 minutes analysis. The water sample size was 250 mL and Wat-250 protocol was used for measurement. The results of average values of radon concentration in groundwater and surface water were 631.56 Bq/m<sup>3</sup> and 508.53 Bq/m<sup>3</sup> respectively. The measured data revealed that the groundwater have higher concentration of radon than the surface water. These measured values are lower than the maximum allowable concentrations in water as recommended by US Environmental Protection Agency EPA and also WHO guidelines.

Keywords: Radon, groundwater and surface water, RAD 7, Yangon

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