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Characterization of a low background counting facility at the Kimballton Underground Research Facility VIVEK SHARMA, THOMAS O'DONNELL, STEFANO DELL'ORO, MARK ALMANZA, Virginia Tech, STEPHANIE TOOLE, California State University, Northridge, JESSICA CHRISTIAN, University of Maryland, Baltimore County, KEVIN DIAZ, Virginia Tech — We report on the characterization of a new low-background counting setup at the Kimballton Underground Research Facility in Virginia. The facility consists of a shielded, high-purity germanium detector deployed at a depth of approximately 300 meters water equivalent and equipped with a muon veto system. Exploiting gamma ray spectroscopy in a low cosmic-ray flux environment the facility can be used to screen materials for applications in low-background experiments, such as neutrinoless double-beta decay or dark matter searches. We present the efficiency of the detector calculated using a GEANT4 simulation, and the sensitivity to isotopes of common interest ^{238}U, ^{232}Th and ^{40}K. As the background goals in next-generation rare decay searches become ever-more stringent, high-sensitivity radiopurity screening facilities will continue to play an important role supporting this science.

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