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Monitoring Radiation Output from an Ohio Shale Outcrop in Eastern Kentucky EDDIE HENDERSON, IGNACIO BIRRIEL, KEVIN ADKINS, Morehead State University — One prevailing source of natural radioactivity in Eastern Kentucky is Ohio Shale, a member of the black organic shale family. Our goal for this study is to measure the amount of radioactivity in an outcrop of Ohio Shale as a means to better understand its radioactive nature and the shielding effects of the nonradioactive Three Lick Bed rock that covers half the shale. We used eight commercially purchased Gamma Scout radiation monitors that employ a halogen filled Geiger-Muller tube to detect the ionizing radiation particles. Using these detectors, we found significant fluctuations in the data in spite of their factory calibration. This led to a relative calibration of the detectors in the laboratory with a 5.0 μCi CS-137 source that did not successfully smooth out the fluctuations in the outcrop data. Taking the lessons learned during the first pass and calibration, we developed a new data collection method for a second pass of the outcrop. This talk will focus on the data collection methods and calibration and conclude with a discussion of future opportunities.

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