

Abstract Submitted
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The LZ Liquid Scintillator Screener Detector SCOTT HASELSCHWARDT, Univ of California - Santa Barbara , LZ COLLABORATION — Surrounding the LUX-ZEPLIN (LZ) liquid xenon time projection chamber will be an outer detector consisting of 17 tonnes of linear alkylbenzene-based, gadolinium-loaded, liquid scintillator (LS). Achieving a low concentration of radioactive impurities in the LS is crucial for the performance of the outer detector. The LZ LS Screener is a small detector designed to characterize radioimpurities in the outer detector LS. I report on a campaign undertaken with the LS Screener in the low-background environment of the former LUX water shield in the Davis Laboratory at the Sanford Underground Research Facility. A variety of radioimpurities, including those in the the uranium and thorium chains, ^{40}K , and ^{14}C , have been measured in the scintillator through modeling of the collected pulse area spectra. The radiopurity levels measured in the LS Screener are comparable to those achieved in other tonne-scale LS detectors and imply that the outer detector will successfully carry out its goals for the LZ experiment.

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