

Abstract Submitted  
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**Producing 30 Tons of Underground Argon for the Next Generation Dark Matter Detector** THOMAS ALEXANDER, Pacific Northwest National Laboratory, THE DARKSIDE COLLABORATION COLLABORATION — The DarkSide-20k experiment seeks to collect and purify 10s of tons of argon gas derived from the Doe Canyon  $CO_2$  well in southwestern Colorado, which has been shown to have a  $^{39}Ar$  concentration of 0.73% of that found in argon collected from the atmosphere. Building upon the work of the DarkSide-50 collaboration, the DarkSide-20k experiment is building and installing a plant capable of producing 100 kg/day of 99.9% pure argon from the same underground source. To achieve this rate, the next generation plant (named Urania) will need to be able to mitigate minor contaminants in the well gas that hampered the previous generation plant. In this talk we will describe the new extraction plant, the identification of the minor contaminants, and how these contaminants are being mitigated.

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