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**Subject:** [External\_Sender] Follow up on TI question regarding Ludlum 193-6  
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Good Evening Richard:

Following up from the question regarding equipment used for the TI housing scans. The equipment used was the Ludlum Model 193-6.

The instrument measures dose rate and detects changes in dose rate as small as 0.1 micro rad. The average background in the housing units was 4.0 micro rad.

Using Microshield, a 3 uCi LLRO (average LLRO) under 4 feet of soil provides a dose rate of 0.6 micro rad at the surface. Therefore, this LLRO was detectable during the housing unit surveys.

At 3 feet below ground surface, a 3 uCi LLRO provides 6 micro rad of dose.

The Microshield runs of 3 and 4 feet of soil do not include the concrete foundation. However, it does not affect the overall ability to detect items at depth.

The housing concrete foundations ranged in thickness from 2 to 4 inches (often were 2 inches). Concrete has a higher density than soil and reduces the dose rate at the surface; however, due to the relative thinness of the foundations, the change in dose rate is negligible.

Therefore, the 193-6 definitely was able to detect LLRO's several feet below the building foundations, similar to the RS-700.

Regards,

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