

NORM Analysis

(Naturally Occurring Radioactive Material)



- *Oil & gas deposits*
- *Pipe scale*
- *Waste products*
- *Minerals*
- *Combustion products*
 - *Gamma spectroscopy*
 - *Alpha spectroscopy*
 - *Beta counting*

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NORM (Naturally Occurring Radioactive Material)

NORM is found naturally almost everywhere in low concentrations including in oil and gas deposits. It can be transported along with gas and petroleum, decaying into other gaseous and solid radioactive particles as they travel and concentrating in such material as pipe scale and waste products. As such, NORM causes concerns in transportation, handling and disposal.

These radioactive elements can also be released during mineral extraction and processing. Combustion such as at coal fired power stations may also concentrate small amounts of **NORM**. Radon gas can accumulate in underground caverns, vaults, tunnels or sewer systems.

Since NORM waste is not part of the nuclear fuel cycle or a manmade radioactive substance they are exempt from the jurisdiction of the Canadian Nuclear Safety Commission (CNSC). Jurisdiction rests with each province or territory.

SRC Environmental Analytical Laboratories can carry out the testing listed below to determine whether materials meet the Unconditional Release Limits (URL). Using a gamma spectroscopy scan, solid material can be analyzed for NORM to detection limits equal to or lower than the URL. Liquid samples may need individual analyses for Ra-226, Pb-210, and Th-230 & 232 to achieve the required detection limits.

The following isotopes are regulated under the NORM guidelines:

- Uranium ²³⁸ series
- Thorium ²³⁰
- Radium ²²⁶
- Lead ²¹⁰
- Thorium ²³²
- Radium ²²⁸
- Thorium ²²⁸
- Potassium ⁴⁰

Contact the lab for further information.