

Remediation of rivers and inundation areas impacted by the NORM industry

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Abstract

The NORM industry has led to important contamination of river sediments, river banks and inundation areas. For the Bankloop river, impacted by the phosphate industry of Tessenderlo (Belgium), we will perform an assessment of the impact of the contamination of river sediments and inundation areas for stylised exposure and remediation scenarios. The following is being assessed in a generic TIER 1 approach: (1) the impact of contamination of river sediments on man and environment and minimal clean-up levels; (2) the impact from disposal of dredged contaminated sediments with time (0, 50, 500 years) considering intact or destroyed cover) and intrusion or not; (3) the impact of inundation of the contaminated river borders and adjacent agricultural and semi-natural areas on recontamination of water and sediments with retrograding water containing radionuclides and the impact of different land covers (bare, crops, grasses – which can be viewed as remediation approaches) on the secondary contaminant loading of the river system; (4) maximal permissible levels of radium (and daughters) contamination of river borders and adjacent areas for different landuse (autarky, dairy farming of (natural) prairies) and potential of simple land improvement approaches.
