

# **Weathered PHC F2 and the Eco-Contact Pathway, Phase 2, Effects of Soil Texture**

The latest (2008) version of the Petroleum Hydrocarbon Canada-Wide Standard (PHC CWS) and the current AENV Tier 1 Guidelines revised the soil remediation guideline for the ecological contact with plants and soil invertebrates pathway (the “eco-contact pathway”) for F2 down from 900 mg/kg to 150 mg/kg (natural area, agricultural, and residential land use). This is the limiting pathway for F2 at the vast majority of sites.

The database of toxicological information on which this F2 guideline was based is not extensive, and considered only fresh, rather than weathered F2. Various work, including several former PTAC studies have indicated that plant and invertebrate toxicity in soil can be lower for weathered than fresh F3 PHCs. This issue was taken into account in a recent upward revision to the soil guideline for F3 in fine soil. However, minimal work relevant to the toxicity of weathered F2 appears to have been conducted, and this project is intended to fill this research gap.

Phase I of this project conducted a rangefinding study with F2 spiked into fine-grained Chernozem soil to

determine the magnitude and kinetics of the reduction to be expected in F2 during 12 months of a bench-scale weathering test. Ongoing Phase I studies are investigating the toxicity of weathered F2 to plants and soil invertebrates.

Assuming that the results of Phase I (expected August 2009) are encouraging, it is intended to expand the scope of this project in Phase II to consider the effect of soil texture, and generate a dataset to support the derivation of a revised guideline for F2 for both coarse and fine soil types.

2012 Axiom\_Weathered F2 Eco-Contact Guideline Report  
2010 Axiom\_Weathered PHC F2 and the Eco-Contact Pathway\_Phase I Report