

# **Chromium, Copper, and Arsenic Concentrations in Soil underneath CCA-Treated Wood Structures**

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and Naila Hosein<sup>2</sup>*

## QUERY SHEET

**Q1:** Au: Equations placement Ok. Pls. check.

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Soils below nine structures (decks and foot bridges) in Florida were examined to evaluate potential impacts from chromated copper arsenate (CCA), a common wood preservative. Eight of the nine structures were confirmed to have been treated with CCA. Soils collected were evaluated for arsenic, chromium, and copper concentrations as well as pH, volatile solids content and particle size distribution. Two types of

soil samples were collected: a soil core and surface soil samples (upper 2.5 cm). One soil core was collected from below each deck and one control core was collected from an area removed from one of the structures. Eight or nine surface soil samples were collected in a grid-like fashion from beneath each structure. Equal numbers of surface control samples were collected from areas away from the structures. Metal concentrations were elevated in both the soil cores and surface samples collected from below the CCA-treated structures. Core samples showed elevated concentrations of metals at depths up to 20 cm. The arithmetic mean concentrations of arsenic, chromium, and copper in the 65 surface soil samples collected from below CCA-treated structures were 28.5 mg/kg, 31.1 mg/kg, and 37.2 mg/kg, respectively, whereas the mean concentrations of arsenic, chromium, and copper in the control samples were 1.34 mg/kg, 8.62 mg/kg, and 6.05 mg/kg, respectively. Arsenic concentrations exceeded Florida's risk-based soil cleanup target level (SCTL) for residential settings in all 65 surface soil samples. The industrial setting SCTL was exceeded in 62 of the 65 samples.

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**KEY WORDS:** *chromated copper arsenate, CCA, treated wood, soil contamination, arsenic, chromium, copper, heavy metals.*

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