

DEVELOP OF SOIL STANDARDS OF IRAN

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Abstract

Soil guideline values are generic quality standards adopted in many countries to regulate the management of contaminated land. They are usually in the form of concentration thresholds (mg/kg soil dry weight) of contaminants in soil, above which certain actions are recommended or enforced. They range from the need for further investigations to the need for remedial actions. In this project soil standard values are derived as the regulatory framework. The soil standards are values at which when exceeded further investigation is necessary to determine the effect on human, animals, and plants and other environmental phases such surface and groundwater resources. The soil standard value specifically refers to a soil contaminant concentration that, if exceeded, may result in health effects that are more than minor for some people. On the other hand, if actual soil concentrations are less than or equal to the soil standard value then this is acceptable because any adverse effects on human health for most people are likely to be no more than minor. In this project, soil clean-up standards have been also determined. The soil clean-up standards are values that at or when exceeded the soil contamination poses a potentially unacceptable risk to human, animals, plant or other phases of environment. At this stage there is need of remediation of the soil to remove the pollution. The soil standards and soil clean-up values have been calculated for five different land-use exposure scenarios. The land-use scenarios were residential, parks and recreation, commercial/industrial, agricultural, and natural lands. The potential pathways of exposure to contaminants in soil are direct ingestion, ingestion of contaminated ground water caused by migration of chemicals through soil to an underlying potable aquifer, dermal absorption, ingestion of produce that has been contaminated via plant uptake. The soil standard and clean-up values were determine for 20 inorganic and 58 organic chemicals. All the standards were calculated for alkaline, $\text{pH} > 7$, and acidic, $\text{pH} < 7$, soils.

Key words:

Soil standards, Clean-up values, Residential, Parks and Recreation, Commercial/ Industrial, Agricultural, and Natural Lands, Alkaline Soils, Acidic Soils.



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