British Industrial Site

RISK ASSESSMENT PROJECT

Site Location: Former Industrial Site, England
Client: Consulting Firm Based in New England
Date: 2003 to Present

Previous manufacturing activities at this overseas site involved the use of mineral-type oils and chlorinated solvents. O'Reilly, Talbot & Okun Associates, Inc. (OTO) is assisting a New England-based consulting firm in completing a probabilistic Quantitative Risk Assessment (QRA) for this site.

Since the proposed Master Plan for the site includes commercial/industrial, public open space, and residential land-uses, the QRA was designed with several objectives. First, potential risks associated with proposed future mixed land-use development scenarios were to be evaluated. Second, determination was to be made as to whether remediation was necessary to support these land-uses. Third, potential risks to construction workers involved in site redevelopment activities were to be evaluated.

The QRA was completed using probabilistic risk assessment methodology in accordance with risk assessment guidance in the United Kingdom's Contaminated Land Exposure Assessment (CLEA) model. The CLEA model evaluates the risks posed to commercial/industrial site workers, open space users, and residents from exposures to soils containing seven metals and one organic compound. For the applicable site-specific receptors, exposure pathways, and contaminants of concern, the CLEA model was completed by the New England-based consulting firm. OTO served as the firm's technical advisor and reviewer during completion of this model.

Because the CLEA model does not evaluate soil exposures potentially experienced by construction workers, OTO developed probabilistic risk calculations for this receptor. These calculations were developed using spreadsheets with the add-in probabilistic program, Crystall Ball®. The exposure pathways that were evaluated included ingestion of soil, dermal contact with soil and dust, inhalation of fugitive dust, and inhalation of soil vapors.

The CLEA model also does not evaluate exposures to groundwater. OTO developed probabilistic risk calculations for indoor inhalation of groundwater vapors by residents and site workers, as well as for dermal contact with groundwater by construction workers.

Finally, because the CLEA model includes only a limited number of contaminants, OTO derived health criteria values for the site's primary contaminants of concern, namely trichloroethylene, vinyl chloride, and aliphatic hydrocarbons, based on international health criteria.