

## **The Navy Vapor Intrusion Decision Process Tool**

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The Navy Environmental Restoration (ER) support group provides remedial program managers (RPMs) with guidance and training on Navy ER program-related issues. Naval Facilities Engineering Command (NAVFAC) Atlantic and Naval Facilities Engineering Service Center has been developing a tool to aid RPMs with the vapor intrusion (VI) decision process. This VI decision process tool is a supplement to the DoD 2009 VI Handbook and is designed to provide consistent and technically defensible closure-oriented strategies for collecting and assessing multiple lines of evidence. The concepts underlying the VI decision process are based on an RPM's need to: 1) organize information into a 3-D conceptual site model (CSM); 2) consider the strength of individual and multiple lines of evidence; and 3) use the decision process to evaluate existing information or select investigative strategies. The decision process emphasizes the fact that not all lines of evidence are created equal and that some evidence is better at showing VI is or is not occurring. For any given line of evidence, its strength may change in the context of the vapor intrusion CSM and will support a definitive, suggestive, or inconclusive determination that vapor intrusion: 1) is both occurring and significant; or 2) is either not occurring or is insignificant. The VI decision process tool is based on a series of questions about the elements of a VI investigation that should be considered to effectively assess the pathway (e.g., building characteristics, vapor releases and sources, groundwater, soil gas, subslab vapor, and/or indoor and outdoor air data). The implications associated with each answer are provided, along with topic-specific help boxes or links to additional information. The ultimate goals of the Navy VI decision process tool are for RPMs to: 1) more easily access and utilize knowledge about VI; 2) select and evaluate the relevant lines of evidence in the context of an overall CSM; 3) make defensible decisions based on the weight of evidence and other balancing real-world factors; and 4) select investigative strategies that maximize the strength of the scientific evidence.