

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Ross Steenson)
MEETING DATE: August 10, 2016

ITEM: 6

SUBJECT: Environmental Risk Management – Status Report

CHRONOLOGY: July 13, 2016 - Environmental Risk Assessment Status Report

DISCUSSION: Last month, we presented this Region’s approach to [environmental risk assessment for soil and groundwater cleanup sites](#), which is the process of evaluating risk to a potential receptor, be it human or ecological. This companion presentation will focus on our approach to environmental risk management at cleanup sites.

What is environmental risk management? Environmental risk is the product of contaminant toxicity and exposure duration; due to this, assessing risk requires making assumptions about how, and for how long, exposure can happen. Environmental risk management denotes the ways we can limit exposure to toxic contaminants and thereby manage risk through administrative controls and engineered systems while site cleanup is underway and when complete cleanup is not feasible.

Why is environmental risk management necessary? At many soil and groundwater cleanup sites, complete cleanup to background levels is not technically or financially feasible, due in part to the depth and/or recalcitrance of contaminants, technology limits, and our limited ability to completely identify and locate all contaminants in the subsurface. Therefore, managing the potential risk posed by remaining “residual” contamination is an integral component of the cleanup process. Likewise, we need to manage the actual or current risk posed by a site’s contaminants during site characterization and cleanup. When issuing site cleanup orders or other directives, we need to determine the right balance of cleanup versus risk management to ensure short- and long-term protection of human health and the environment.

What risk management measures are commonly used? Examples of long-term risk management measures include engineered systems such as physical barriers (e.g., fences, vapor barriers, caps or covers, cutoff walls, and liners), groundwater extraction, and building ventilation, and administrative controls such as deed restrictions and risk management plans. Managing risk during cleanup may include interim or short-term measures such as providing alternate sources of drinking water (albeit rare in this Region) or evacuating buildings.

As an example using managing the risk to human health posed by vapor intrusion to buildings, interim risk management measures could include adjustments to building ventilation systems or evacuation of building occupants. Long-term risk management measures could include installation of vapor barriers beneath building foundations or engineered sub-structural depressurization systems.

How do we ensure risk management measures remain protective of human health and the environment? The primary challenge facing the success of long-term measures is confidence in their future upkeep and effectiveness. Thus, site cleanup orders typically include requirements for long-term site stewardship of measures such as land use controls/deed restrictions, operation and maintenance plans, monitoring, site-tracking databases, and financial assurance mechanisms. We do not close sites until complete cleanup is achieved or long-term effectiveness of risk management measures is assured.

RECOMMENDATION: This is an information item not requiring action by the Board.