

Title: MTBE2000 Project
NCBC-35-99 (Rev. 10/00)

Lead PI/Affiliation: UCSB

Date/Duration:

Initiated - 02/99
Completed - 05/00

Abstract:



The MTBE2000 Project, an University of California Santa Barbara masters degree team project, is an effort to continue an ecological risk analysis that began with a pre-risk screening in 1998 (NCBC-30-98). The Department of Defense three-tiered action plan for Ecological Risk Assessment will be followed. The primary goal of the MTBE2000 project is to produce a complete ecological risk analysis at Port Hueneme (Tier Two). Secondly, Navy guidelines call for consideration of possible recommendation and remediation strategies for the contaminated zone (Tier Three). The final phase of the project will include both cost-benefit and policy analyses.

The plume, which is believed to have originated from a gasoline leak circa 1984, is currently confined below by a semi-perched aquifer (8-20 ft). The preliminary ecological risk screening determined that even if the plume were to reach the ocean or any nearby groundwater sources, it would be unlikely that contaminants from this site would have region-wide effects.

Since the Tier One screening found the site to be predominantly unaffected by the plume, this project will expand the previous analysis to cover a range of potential factors. The effort will first complete a basic ecological risk assessment for the site, and then add new levels of probable factors. This will include examining the potential impact of the plume changing course and the possible surfacing of the plume in open bodies of water (i.e., wetlands and canals). These probabilistic examinations will explore the impacts of a range of MTBE concentrations at the Port Hueneme site and the effects of analogous MTBE levels over a selected range of other ecosystems and environmental conditions. The results of this type of predictive ecological risk assessment will thus prove useful beyond the spatial boundaries of the Port Hueneme contamination.

Results/Conclusions: Toxicity observed nearest the gasoline release area was higher than found in down gradient locations. No correlation between toxicity and MTBE concentrations.

From late 1984 to early 1985, approximately 10,800 gallons of gasoline leaked from two storage tanks and piping under the Naval Exchange (NEX) gas station at the Naval Base Ventura County Port Hueneme Site (NBVC). Since 1985, the Navy has taken actions to prevent any further damage to the environment from the leaks. The MTBE remediation technologies demonstrated at NBVC Port Hueneme Site are part of the overall strategy in the NEX Plume Management plan for containment and control of the plume to prevent any further damage to the environment.

Publications:

Bates, M., et al., "Ecological Risk Assessment, Evaluation of the Ecological Risk Associated with a Groundwater Plume of MTBE at Port Hueneme, CA, Final Report," Donald Bren School of Environmental Science and Management, UC Santa Barbara, March 2000.