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

STAFF SUMMARY REPORT (Elizabeth Allen)
MEETING DATE: May 14, 2008

ITEM: **10**

SUBJECT: **Environmental Screening Levels –** Status Report

CHRONOLOGY: The Board previously considered this topic in November 2000

DISCUSSION: This status report explains the Water Board's Environmental Screening Levels (ESLs) - what they are, how they are used, and how we update them to maintain their relevance. ESLs are conservative concentrations for chemicals commonly found in soil and groundwater at sites where chemicals have been spilled, below which we generally do not expect to see impacts from soil or groundwater contamination. Since their introduction, ESLs have become an integral part of the site-cleanup process for Water Board staff, many local agencies, and the regulated community.

Since our office developed the first version of ESLs in 1999, ESLs have evolved to serve as an effective tool in the rapid evaluation of data collected from sites with spills to soil and/or groundwater. Through the use of the ESLs, it is possible to quickly determine whether detected chemicals may pose a significant threat to human health and the environment, and thus warrant further evaluation. The ESLs address not only the environmental protection goals presented in the Basin Plan, but also focus on human health concerns, including vapor intrusion from subsurface contamination into indoor air. For these reasons, the ESLs address a far greater range of possible public health exposure pathways and environmental media than other screening levels available in California.

ESLs have been derived for more than 100 of the most common contaminants. They are contained in a series of tables, which are included in a technical report that describes their derivation and recommended applications. ESLs can also be displayed using an Excel file that will automatically return values for specific exposure conditions. The concentrations provided as ESLs fall into three categories: statutorily-derived concentrations (such as Maximum Contaminant Levels for drinking water), risk-based concentrations, and concentrations that are intended to avoid adverse nuisance conditions. Risk-based concentrations are calculated to be health-protective of both humans and wildlife species. To provide more information, we have included the Executive Summary of the ESL technical report as Appendix A. Both the

technical report and Excel file are available on the Water Board's website at: www.waterboards.ca.gov/sanfranciscobay/esl.shtml.

In addition to their use as a simple screening tool, ESLs can also be used in the preparation of a more detailed risk assessment by matching specific exposure pathways with current or anticipated site conditions. In this manner, ESLs serve as a cost-effective tool for performing risk assessments and helping determine if cleanup is needed. While not intended as cleanup goals, ESLs may serve as cleanup goals under specific conditions. As a practical matter, ESLs have also encouraged the restoration of Brownfield sites, by helping prospective buyers and redevelopers to quickly assess future cleanup needs.

ESLs are widely used in this Region, and to a lesser degree in other regions. They are calculated to be representative of conditions encountered in the San Francisco Bay Area, although most of them are applicable elsewhere. The latest version of the Excel file allows the user to select criteria that can be used in other areas of the State. This addition should increase their usefulness in other regions.

ESLs need to be updated regularly. Underlying values change, including statutorily-derived concentrations and risk-based concentrations, and those changes need to be reflected in the ESLs. We also need to update the ESL structure and methods to address new scientific information. For example, in 2005, we added soil-gas screening levels to the ESLs to address vapor intrusion concerns. We have updated the ESLs about every two years since their introduction. The most recent updates were made in November 2007 and April 2008. We expect that the ESLs will continue to be updated to serve as an essential tool for Water Board staff and the oversight of contaminated soil and groundwater cleanup.

RECOMMEN-DATION: No action needed – information item

File No. 2109.00 (EA)

Appendix A: ESL Executive Summary