

March 7, 2001

**Comments on the Mercury Concentrations in Stormwater Runoff from the
LEHR Superfund Site: Other Potential Bioaccumulation Problems**

Julie Roth, Executive Director
DSCSOC

Julie,

I have reviewed the concentrations of mercury that have been found recently in the stormwater runoff from the LEHR site, and conclude that the concentrations found could be a contributor to the excessive mercury concentrations that are found in Putah Creek fish. As I have discussed in the past, if the concentrations found were less than about 5 ng/L, it could be concluded that the LEHR site stormwater runoff is not likely a significant source of mercury for Putah Creek that could contribute to excessive bioaccumulation of mercury in the Creek's fish. Since the concentrations found are in the several hundred ng/L range, there is a potential for LEHR site stormwater runoff to be a contributor to the Putah Creek fish mercury problem.

Previously, RPMs have raised the issue about whether the concentrations of mercury -- and, for that matter, other constituents -- in LEHR site stormwater runoff were the same as background concentrations from other nearby areas. From my understanding of current regulatory requirements, stormwater runoff from LEHR cannot cause or contribute to violations of water quality standards/objectives in Putah Creek independent of whether stormwater runoff from other nearby areas, which are considered "background," also cause or contribute to violations of these standards. As it stands now, UCD/DOE should begin to develop mercury control programs in LEHR site stormwater runoff so that the concentrations in the runoff cannot cause or contribute to violations of current CTR criteria for mercury and the revised US EPA criteria that will be promulgated within a year or so, of a few ng/L.

The situation that has developed on the stormwater runoff mercury issue is a prime example of the inadequacy of the LEHR Superfund site stormwater runoff investigation/management program. In 1995, when I first became involved in the LEHR site as the DSCSOC TAG advisor, one of my first comments was on the inadequacy of stormwater runoff monitoring for the LEHR site. I pointed out that the approach used by the then-DOE/UCD contractor regarding addressing bioaccumulation issues was obviously technically invalid. Now, six years later, my concerns about the inadequate stormwater runoff monitoring program that has been conducted by UCD/DOE have been borne out. Unfortunately, DSCSOC has had to spend a significant amount of its limited funding from its US EPA TAG Grant to repeatedly discuss these issues.

Related Problem

I wish to mention, as I have done several times in the past, that we still do not know whether the fish in Putah Creek have excessive concentrations of chlordane that was used at the LEHR site to control fleas on dogs. The soils have been found to be contaminated with chlordane. While there have been some measurements of chlordane in stormwater runoff above the detection limit for the methods used, these

detection limits are well above the US EPA criteria for chlordane to prevent excessive bioaccumulation in Putah Creek fish. As was the case with mercury, the analytical methods that have been used by UCD and DOE for chlordane in stormwater runoff have been inadequate to determine whether, in general, chlordane is present in stormwater runoff from the LEHR site at sufficient concentrations to cause violations of the US EPA water quality criteria for chlordane.

Unfortunately, the US EPA ATSDR studies on bioaccumulation of organochlorine compounds in Putah Creek fish have not been done adequately. There is still need to do proper studies of whether there are organochlorine compounds (such as the legacy organochlorine pesticides and PCBs/dioxins) in Putah Creek fish that are a threat to the use of these fish as human food. If excessive concentrations of chlordane or other organochlorine pesticides/PCBs/dioxins are found in Putah Creek fish, considering US EPA guideline values and highest fish consumption rates for those who consume fish from Putah Creek, then LEHR site stormwater runoff needs to be monitored for the organochlorine pesticides, PCBs and dioxins to determine whether this stormwater runoff could be contributing to excessive bioaccumulation of these chemicals in Putah Creek fish.

I am beginning to work with Dr. Val Connor of the CVRWQCB on the development of TMDLs to control the excessive bioaccumulation of the organochlorine pesticides such as DDT, dieldrin, chlordane, toxaphene, etc., as well as PCBs, in fish that have caused many Central Valley streams and rivers to be listed as Clean Water Act 303(d) impaired waterbodies. This listing leads to the need for the CVRWQCB to develop TMDLs to control the excessive bioaccumulation. I am presenting a paper on my views on how to approach this issue at the American Chemical Society national meeting that will be held in San Diego during the first week of April 2001. A preprint of an extended abstract of this paper,

Lee, G. F. and Jones-Lee, A., "Developing TMDLs for Organochlorine Pesticides and PCBs," Environmental Chemistry Division Extended Abstracts, American Chemical Society national meeting, San Diego, California, April (2001),

is available from me upon request. It will soon be posted on my website, www.gfredlee.com.

If there are questions about these issues, please contact me, and please forward them on to the RPMs and PRPs for the LEHR Superfund site.

Fred