

Section 7

Risk Evaluation

As part of an RI Report, a COC list is usually established through a formal baseline risk assessment. This document does not include a formal risk assessment as described in Section 4, but instead the list of COCs was established through evaluation compared to regulatory thresholds and then prioritization through evaluation of the screening criteria. An updated baseline risk assessment is not considered required for this document because the exposure pathways have not changed from the 1992 RI, and notification levels and MCLs (which are established based on risk to human health and will serve as chemical-specific ARARs) as well as other ARARs (location-specific and action-specific) will be used to identify remedial technologies and develop remedial alternatives.

Though an updated baseline risk assessment is not included in this document it is important to understand the exposure pathways and potential receptors, so a summary of the baseline risk assessment from the 1992 RI will be summarized below.

7.1 Human Health Evaluation

The 1992 RI included a baseline risk assessment that included identification of the COCs, potential exposure routes, and an evaluation of the potential risk to receptors. The receptors used in the evaluation of risk included both human and ecological receptors. However, the evaluation of ecological receptors was brief because of the degraded habitat in the Los Angeles River and the anticipated low concentrations of COCs through discharge of groundwater to surface water.

7.1.1 Exposure Assessment and Potential Receptors

The potential receptors and exposure pathways, taken from the 1992 RI, are presented in Table 7-1 along with a summary of whether the pathway is complete based on the current understanding of contamination and land use in the SFV.

Primary Source	Primary Release Mechanism	Secondary Contamination Source	Exposure Pathway	Receptor		
				Residential	Commercial	Ecological
Release of chemicals to soil from past uses (industrial, agricultural, etc.)	Leaching	Groundwater	Dermal adsorption	●	--	--
			Ingestion	●	●	--
			Inhalation during showering	●	--	--
			Direct contact through surface discharge	--	--	--

● exposure pathway is complete for receptor population.

-- exposure pathway is incomplete or insignificant for receptor population.

It should be noted that other exposure pathways associated with contact with soil and soil gas are potentially complete in the SFB at or near the site of releases. Because these exposure routes will be addressed by the responsible party, this assessment (as the one presented in the 1992 RI) is focused on groundwater-associated receptors and exposure routes. Figure 4-1 shows the potential receptors and exposure routes along with the sources and release mechanisms for the SFB.

7.1.2 Risk Evaluation

The baseline risk assessment in the 1992 RI identified risk above the risk management range (1×10^{-4} to 1×10^{-6}) and hazard index (values greater than 1) for several organic and inorganic compounds from both ingestion and inhalation of groundwater. The risk evaluation focused on a residential receptor because that population is most sensitive to the chemical in groundwater because of exposure time and diversity of population (e.g., children versus adults). The COCs above the risk management range identified through the risk assessment are included below:

- Carbon tetrachloride (ingestion)
- 1,2-DCA (ingestion and inhalation)
- 1,1-DCE (ingestion and inhalation)
- PCE (ingestion)
- TCE (ingestion and inhalation)
- Arsenic (ingestion)
- Total chromium (ingestion)

The risk assessment also identified nitrate as a potential risk because of an elevated hazard index from ingestion of groundwater.

It can be assumed that the risks identified during the 1992 RI are still present from groundwater in the SFB for the chemicals identified, and it would be likely that the remaining high-priority COCs and some of the medium-priority COCs would pose an unacceptable risk—specifically Cr(VI), 1,2,3-TCP, and perchlorate. Since 1992, a number of changes have been made in chemical toxicity or identification of other health effects, with most chemicals having increasing risk because of carcinogenic or non-carcinogenic affects rather than decreasing risk. This would support the fact that the chemicals above along with the other high-priority COCs would require further evaluation as part of the Draft FS being generated concurrently with this document.

7.2 Chemicals of Concern in the SFB

Based on the risk evaluation of groundwater in the SFB as presented in Section 4.3, a total of 12 compounds are considered the high-priority COCs in groundwater. This list is similar to the COCs identified during the 1992 RI, but is expanded to include emerging COCs, such as 1,2,3-TCP and 1,4-dioxane. The list of the 12 high-priority COCs is presented below and will be considered during the modeling and the evaluation performed as part of the Draft FS:

- TCE
- PCE
- Cis-1,2-DCE
- 1,1-DCE
- 1,2-DCA
- CTET
- 1,2,3-TCP

- 1,4-Dioxane
- NDMA
- Hexavalent chromium
- Perchlorate
- Nitrate (as NO₃)

