

## 2.0 PRESENTATION OF THE CASE STUDY

The National Focal Point in Cambodia selected the Electricite du Cambodge (EDC) Sambour warehouse (“the SEDCW site” or “the site”), as a case study for a human risk assessment of poly-chlorinated biphenyls (PCBs). The site is situated along the Cheung Ek Road (Road No. 303), about 9 km from the Phnom Penh city center. It is located in a sub-urban district of Phnom Penh in Sambour village, Dangkor Commune, Dangkor District. (See Appendix A1 for more detail).

The SEDCW site is managed and owned by Electricite du Cambodge (EDC). The site opened at the present location in 1997 by combining three large warehouses that were once located in various parts of Phnom Penh and now contains facilities for collection, storage and repair of electrical equipment including transformers, capacitors and their oil. The SEDCW site is the country’s biggest site for storing transformers, most of which are planned for disposal.

Contamination at the SEDCW site is caused primarily by storing of old transformers, leakage of fluids from transformers, and off-site transport of contaminants by rain-runoff, air, and trucks, improper handling of PCB containing equipment and fluids and disposing of old electrical equipment and waste. All these operations are performed in the warehouse compound – three warehouse building and open-air storage areas. Contaminants are known to migrate to the soil, sediments, water and biota as a result of the SEDCW site operations, and to ultimately enter the human population (through dermal contact and consumption of contaminated food). This was confirmed through blood sampling of populations at risk.

The risk assessment conducted as part of the POPs Project identified several categories of receptors (i.e. population potentially exposed to contamination), including approximately 1,438 people. The full-time workers and guards at the SEDCW site are considered to have the greatest potential of exposure. Staff and students in the EDC training complex may also be potentially exposed, as well as regular visitors and shift workers. Members of the local community, students of the nearby school and training center are susceptible to exposure through migration of the contaminants (dust, water). A detailed description of the site surroundings and operations, as well as key results of the site risk assessment, is provided in Appendix A1.

As part of the risk assessment conducted for the SEDCW site, various measures aimed at efficiently managing and reducing the POPs hazard were identified. These measures were developed with stakeholder inputs gathered at the National Training Workshop in Siem Reap, Cambodia in January 2009 (Hatfield, 2009b) and have been grouped into 3 scenarios as presented in Appendix A1.

Three risk management objectives have been identified: mitigation of the POPs hazard; containment of the existing contamination; and remediation of the site. It should be noted that improving Health and Safety Measures (Scenario 1) is the short-term priority; containment and disposal (Scenarios 2 and 3, respectively)

are longer-term and more costly options. Furthermore, it must be noted that the measures of Scenario 1 are included in the other two scenarios to meet the need for environmental and human health monitoring and evaluation. Without adequate management of POPs hazard; mitigation and containment measures only have limited efficacy because in the absence of effective management addressing contamination, human exposure risk would increase again over time.

An outline of the risk management scenarios has been provided in Appendix A1; detailed feasibility studies are needed to define in detail the nature and extent of the measures to be implemented, especially with regard to the containment and remediation scenarios.