2.1.5 Considering Climate Change and Health Impacts of Emissions during Remedial Actions

During the remedial technology applications, identification of specific pathways for migration of contaminants and appropriate controls of such pathways are emphasized in each of the technology applications in this book. The emissions from the contaminants from waste piles impacts human health and the environment. In some cases the reasons for high occurrences of certain diseases among residents living near waste sites were linked to their exposure to the contaminants due to migration of contaminants from industry-generated wastes that were kept in waste piles before any treatment. For example, in 30 sites in Michigan and several sites in Indiana have reported contamination of drinking water with per- and poly-fluoroalkyl substances (PFAS), which is a persistent chemical and have been linked to testicular and kidney cancer, liver damage and developmental problems in children (Saenz, 2019).

The high levels of volatile organic contaminant (VOC) emissions from the waste piles during transportation, storage and actual remediation activities also contribute towards the climate change by adding greenhouse gases to the atmosphere. As listed in Table 3.1, chapter 3 of this book, several fluoro-methane and other halogenated and non-halogenated compounds are common VOCs found in the waste. These VOCs are mostly identified as greenhouse gas and the fluoro-halogenated compounds are also considered as ozone depleting substance.

There are serious concerns about the climate change and the recent disasters due to the weather pattern changes and calamities all across the globe which underscores the need to consider the impacts of remediation on global warming and climate change. A brief synopsis of the following findings by the European Commission (EC) and the National Aeronautics and Space Administration (NASA) should provide an understanding of the significance of this issue.

For further information check on the publication of the book (*ISBN 978-0-367-43550-9*) by the publisher.