

2 Introduction

Even today 56 years after the end of World War II the residues of warfare agents cause a major threat for the environment and human health. Not only warfare agents but also explosives are responsible for this. Most of them are nitroaromatic compounds and as such suspected of being carcinogenic and mutagenic. Factory buildings were sparsely laid out and therefore huge areas of about 2.6 x 1.6 km² were needed to prevent a halt of production in case of explosion (MARTINETZ & RIPPEN, 1996: 27). As a result of accidents during the manufacturing, leakages, bombings or just improper waste disposal, the soils on these areas became contaminated with explosives, their precursors and degradation products. The threat to the environment today is intensified by the fact that the sites were usually built around areas with sources of groundwater, as a lot of water is needed for the manufacturing process (PREUß et al, 1988). Hence, the contaminants in the soil threaten the drinking water and provisions for drinking water already had to be closed due to nitroaromatic residues in the water (PREUß et al, 1988).

When the problem of explosive-contaminated sites first became evident in Germany in the late 1980's, the number of suspect sites was evaluated. In the area within the territory of the former Federal Republic of Germany several hundred sites (HAAS & STORK, 1998), but at least 350 (PREUß & HAAS, 1987) were used for the manufacturing, filling or storage of warfare agents, munitions or explosives and are a potential threat for the environment. After reunification this number was increased by the inclusion of sites from the former German Democratic Republic. So far the scientific research and remediation treatments have focused on the biggest and most well-known sites like Hessisch-Lichtenau, Stadtallendorf (both in Hess), Hallschlag (Rhineland-Palatinate), Clausthal-Zellerfeld (Lower Saxony) and Elsnig (near Torgau in Saxony).