Water and water pollution

Literature, Russian Literature

Water Pollution of the of the Water Pollution Part A In general the quality of water is established by measuring the chemical and physical properties of a sample of that water and then comparing it with the stipulated water quality standards or recommendations. The objective of these norms is to facilitate the provision of water that is safe for consumption by the people. The acceptable levels of toxicity to life forms constitute the basis of such standards (Water Quality, 2011). Water quality can be understood as a metric of the aptness of water for some specific use. This measure is dependent on the biological, chemical and physical properties of the water. Scientists ascertain water quality by subjecting a water sample's temperature, quantity of bacteria and amount of dissolved minerals to measurement and analysis. These results are thereafter matched with the specified norms (Water Quality , 2004). This makes it possible to determine the suitability of the water for some specified purpose. Some of the properties of water that can be determined then and there itself, are; acidity or pH level, dissolved oxygen, electrical conductance, and temperature. However, testing for the presence and amount of individual chemicals is in general conducted at the laboratory. Chemical analysis cannot provide information regarding the amount of bacteria present in water. Some of these bacteria are to be found in the intestines of animals and humans, which indicates the possible presence of pathogens. Some of the pathogens, whose presence was discovered, in public water supplies are giardia and cryptosporidium. These have been established as the cause of illness among a huge number of individuals, in some places (Cordy, 2001). Part B The MCL or Maximum Contaminant Level is defined as the maximum concentration of

a chemical permitted in public potable water systems. This maximum concentration is stipulated by the US Environmental Protection Agency (EPA). A hundred odd chemicals, believed to pose the greatest harm, have been selected for specifying the relevant MCL (Kamrin, 1997). The EPA has categorically declared that MCLs are enforceable. The latter have to be established in close proximity to the maximum contaminant level goals. In addition, MCLs are founded on affordability, treatment technology and other feasibility factors. The process of determining an MCL commences with an assessment of the harmful results of a chemical and the quantities in which this chemical has to be present for causing harm (Kamrin, 1997). This exercise culminates in establishing a Reference Dose, which defines the dosage that provides protection against the adverse effects of a chemical. Subsequent to testing these dosages on animals, the results are extrapolated to humans. The entire process is on the basis of the standards and procedures established by the EPA (Kamrin, 1997). The chief cause of water pollution is human activity, and these sources can be classified as point and non – point. Sources that discharge pollutants at some specific place are known as point sources. Some instances are agriculture, factories, sewage treatment plants, oil wells and underground mines. In addition, there are many sources of water pollution that cannot be ascribed to any particular source, such sources are termed as non – point sources. Some examples of these are acid deposits due to vehicular traffic, the entry of pollutants into water through groundwater and pollutants that disseminate through rivers. The difficulty in identifying the various points of origin, in non – point sources, makes it difficult to control such pollution (Lenntech, 2009). Any

substance or change that seriously harms life forms that live in or utilize water is defined as a pollutant of water. Thus, it can be surmised that water pollution can endanger human health or render the affected water unsuitable for the specified purpose.

List of References Cordy, G. E. (2001, March). A Primer on Water Quality. Retrieved June 21, 2011, from US Geological Survey: http://pubs. usgs. gov/fs/fs-027-01/pdf/FS-027-01. pdf Kamrin, M. (1997, April). Establishing the Maximum Contaminant Level. Retrieved June 21, 2011, from http://extoxnet. orst. edu/faqs/safedrink/mcl. htm Lenntech. (2009). What is water pollution? Retrieved June 21, 2011, from http://www. lenntech. com/water-pollution-faq. htm#ixzz1PuIM20n8 Water Quality . (2004, November 10). Retrieved June 21, 2011, from http://www. cotf. edu/ete/modules/waterq3/WQassess1. html Water Quality. (2011). Retrieved June 21, 2011, from United Nations Water for Life 2005 – 2015: http://www. un. org/waterforlifedecade/quality. html