

Bio-Chemical Pollution Of Ground And Surface Water Of Manpur Block.

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Ground water contaminated always the human activity. In manpur block area where population density is high and human use of the land is intensive, ground water is especially vulnerable. Virtually any activity whereby chemicals or wastes may be released to the environment, either intentionally or accidentally, has the potential to pollute ground water. When ground water becomes contaminated, it is difficult and expensive to clean up. To begin to address pollution prevention or remediation, we must understand how surface waters and ground waters interrelate. Ground water and surface water are interconnected and can be fully understood and intelligently managed only when that fact is acknowledged. If there is a water supply well near a source of contamination, that well runs the risk of becoming contaminated. If there is a nearby falgu river or other sources, that water body may also become polluted by the ground water.

SOURCES OF GROUND WATER CONTAMINATION

In manpur block area Ground water can become contaminated from natural sources or numerous types of human activities. Residential, municipal, commercial, industrial, and agricultural activities can all affect ground water. Contaminants may reach ground water from activities on the land surface, such as releases or spills from stored many industrial wastes; from sources below the land surface but above the water table, such as septic systems or leaking underground oil storage systems; from structures beneath the water table, such as wells; or from contaminated recharge water.

Natural Sources

Some substances found naturally in rocks or soils, such as iron, manganese, arsenic, chlorides, fluorides, sulfates, or radioactive elements, can become dissolved in ground water. Other naturally occurring substances, such as decaying organic matter, can move in ground water as particles.

The natural arsenic pollution occurs because aquifer sediments contain organic matter that generates anaerobic conditions in the aquifer. These conditions result in the microbial dissolution of iron oxides in the sediment and, thus, the release of the arsenic, normally strongly bound to iron oxides, into the water. As a consequence, arsenic-rich groundwater is often iron-rich, although secondary processes often obscure the association of dissolved arsenic and dissolved iron

Whether any of these substances appears in ground water depends on local conditions. Some substances may pose a health threat if consumed in excessive quantities; others may produce an undesirable odor, taste, or color. Ground water that contains unacceptable concentrations of these substances is not used for drinking water or other domestic water uses unless it is treated to remove these contaminants.

The occurrence of fluoride is close related to the abundance and solubility of fluoride-containing minerals such as fluorite (CaF₂). Considerably high concentrations of fluoride in groundwater are typically caused

by a lack of calcium in the aquifer. Health problems associated with dental fluorosis may occur when fluoride concentrations in groundwater exceed 1.5 mg/l, which is the WHO guideline value since 1984.

Septic Systems

Onsite wastewater disposal systems used by homes, offices or other buildings that are not connected to a city sewer system. Septic systems are designed to slowly drain away human waste underground at a slow, harmless rate. An improperly designed, located, constructed, or maintained septic system can leak bacteria, viruses, household chemicals, and other contaminants into the groundwater causing serious problems.

Improper Disposal of Hazardous Waste

In the manpur block, there are thought to be over 10,000 known abandoned and uncontrolled hazardous waste sites and the numbers grow every year. Hazardous waste sites can lead to groundwater contamination if there are barrels or other containers laying around that are full of hazardous materials. If there is a leak, these contaminants can eventually make their way down through the soil and into the groundwater. Many chemicals should not be disposed of in household septic systems, including oils, lawn and garden chemicals, paints and thinners, medicines, photographic chemical, and textiles chemicals. Similarly, many substances used in industrial processes should not be disposed of in drains at the workplace because they could contaminate a drinking water source. Industry should train employees in the proper use and disposal of all chemicals used on site. The many different types and the large quantities of chemicals used at industrial locations make proper disposal of wastes especially important for ground water protection.

Releases and Spills from Stored Chemicals and Petroleum Product

Underground storage tanks are commonly used to store petroleum products and chemicals products. For example, Many petroleum departments also store diesel fuel, petrol, kerosene oil or chemicals in on-site tanks. Industries use storage tanks to hold chemicals used in industrial processes or to store hazardous wastes. Many underground storage tanks exist in the manpur, the contents of many of these tanks have leaked and spilled into the environment. An underground storage tank develops a leak, which commonly occurs as the tank ages and corrodes, its contents can migrate through the soil and reach the ground water. Abandoned underground tanks pose another problem because their location is often unknown. Aboveground storage tanks can also pose a threat to ground water if a spill or leak occurs.

Pesticide and Fertilizer Use

Many tons of fertilizers and pesticides e.g., herbicides, insecticides, rodenticides, fungicides etc are used annually in manpur block area for crop production. In addition to farmers use these chemicals. A number of these pesticides and fertilizers highly toxic have entered and contaminated ground water following normal, registered use. Some pesticides remain in soil and water for many months to many years. Another potential source of ground water contamination is animal wastes that percolate into the ground from farm. Wastes should be removed at regular intervals.

Landfills

Landfills are the places that our garbage is taken to be buried. Landfills are supposed to have a protective bottom layer to prevent contaminants from getting into the water. However, if there is no layer or it is cracked, contaminants from the landfill (car battery acid, paint, household cleaners, etc.) can make their way down into the groundwater.

Conclusion and recommendations

Ground Water pollution is a global issue and world community is facing worst results of polluted water. Major sources of water pollution are discharge of domestic and agriculture wastes, population growth, excessive use of pesticides and fertilizers and urbanization. Bacterial, viral and

parasitic diseases are spreading through polluted water and affecting human health. It is recommended that there should be proper waste disposal system and waste should be treated before entering in to river. Educational and awareness programs should be organized to control the pollution.

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