Raw Water Source

The various sources of water can be classified into two categories:

1. Surface sources, such as
    a. Ponds and lakes;
    b. Streams and rivers;
    c. Storage reservoirs; and
    d. Oceans, generally not used for water supplies, at present.
2. Sub-surface sources or underground sources, such as
    a. Springs;
    b. Infiltration wells ; and
    c. Wells and Tube-wells.

Water Quality

The raw or treated water is analysed by testing their physical, chemical and bacteriological characteristics:

Physical Characteristics:

Turbidity
Colour
Taste and Odour
Temperature

Chemical Characteristics:

pH
Acidity
Alkalinity
Hardness
Chlorides
Sulphates
Iron
Solids
Nitrates

Bacteriological Characteristics:

Bacterial examination of water is very important, since it indicates the degree of pollution. Water polluted by sewage contain one or more species of disease producing pathogenic bacteria. Pathogenic organisms cause water borne diseases, and many non pathogenic bacteria such as *E.Coli*, a member of coliform group, also live in the intestinal tract of human beings. *Coliform* itself is not a harmful group but it has more resistance to adverse condition than any other group. So, if it is ensured to minimize the number of coliforms, the harmful species will be very less. So, coliform group serves as indicator of contamination of water with sewage and presence of pathogens.

The methods to estimate the bacterial quality of water are:

Standard Plate Count Test
Most Probable Number
Membrane Filter Technique

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