

# APPENDIX B:

## Technical Glossary

## TECHNICAL GLOSSARY

The list of possible definitions within the report may be seen below. Please note that some definitions may not be relevant to this report.

### HYDROGEOLOGY:

A **Principal Aquifer** is a layer of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

**Secondary (A) Aquifers** consist of deposits with permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as Minor Aquifers.

**Secondary (B) Aquifers** consist of deposits with predominantly lower permeability layers with may stoke and yield limited amounts of groundwater due to localised features such as fissures, think permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

**Secondary Aquifers (Undifferentiated)** are assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both a minor aquifer and non-aquifer in different locations due to the variable characteristics of the rock type.

**Unproductive Strata** are rock layers with low permeability that have negligible significance for water supply or river base flow. These were formerly classified as non-aquifers.

### FLOOD ZONES:

**Environment Agency Flood Zone 2**, defined as; land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.

**Environment Agency Flood Zone 3** shows the extent of a river flood with a 1 in 100 (1% or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year.

**Environment Agency Flood Zone 3 area that benefits from flood defences**, defined as; land and property in this flood zone would have a high probability of flooding without the local flood defences. These protect the area against a river flood with a 1% chance of happening each year, or a flood from the sea with a 0.5% chance of happening each year.

### GROUNDWATER SOURCE PROTECTION ZONES (SPZS):

**Inner Zone (SPZ1):** This zone is 50 day travel time of pollutant to source with a 50 metres default minimum radius.

**Outer Zone (SPZ2):** This zone is 400 day travel time of pollutant to source. This has a 250 or 500 metres minimum radius around the source depending on the amount of water taken.

**Total Catchment (SPZ3):** This is the area around a supply source within which all the groundwater ends up at the abstraction point. This is the point from where the water is taken. This could extend some distance from the source point.

**Zone of Special Interest (SPZ4):** This zone is where local conditions require additional protection.

**IN-SITU STRENGTH GEOTECHNICAL TESTING:**

**Windowless Sample and/or Cable Percussion and/or Rotary Boreholes** provide samples of the ground for assessment but they do not give any engineering data. The standard penetration test (SPT) is an in-situ dynamic penetration test designed to provide information on the geotechnical engineering properties of soil. The test uses a thick-walled sample tube, with an outside diameter of 50mm and an inside diameter of 35mm, and a length of around 650mm. This is driven into the ground at the bottom of a borehole by blows from a slide hammer with a weight of 63.5kg falling through a distance of 760mm. The sample tube is driven 150mm into the ground and then the number of blows needed for the tube to penetrate each 75mm up to a depth of 450mm is recorded. The sum of the number of blows is termed the "standard penetration resistance" or the "N-value".

**Dynamic Probing** involves the driving of a metal cone into the ground via a series of steel rods. These rods are driven from the surface by a hammer system that lifts and drops a 63.5kg (SHDP) hammer onto the top of the rods through a set height, thus ensuring a consistent energy input. The number of hammer blows that are required to drive the cone down by each 100mm increment are recorded. These blow counts then provide a comparative assessment from which correlations have been published, based on dynamic energy, which permits engineering parameters to be generated. (The Dynamic Probe 'Super Heavy' (SHDP) Tests were conducted in accordance with BS 1377; 1990; Part 9, Clause 3.2).