

Rosegreen GWB: Summary of Initial Characterisation.

| Hydrometric Area Local Authority | | Associated surface water bodies | Associated terrestrial ecosystems | Area (km ²) |
|---|---|--|-----------------------------------|-------------------------|
| 16 – Suir Co. South Tipperary | | Moyle | None | 7.8 |
| Topography | | This groundwater body lies a few kilometres southeast of Cashel in an area of slightly elevated topography. | | |
| Geology and Aquifers | Aquifer type(s) | Lg : Locally Important Sand and Gravel Aquifer. | | |
| | Main aquifer lithologies | Sand and Gravel | | |
| | Key structures | Geological structures do not have an important influence on groundwater flow in this aquifer. | | |
| | Key properties | No site-specific data. Permeability in sand & gravels is often in the order of 20-70 m/d. Conservative estimates of porosity of sand & gravel aquifers tend to be about 0.15, based on porosity values other parts of the country. | | |
| | Thickness | The thickness of the deposits in this area is over 10m. | | |
| Overlying Strata | Lithologies | None | | |
| | Thickness | | | |
| | % area aquifer near surface | High | | |
| | Vulnerability | High | | |
| Recharge | Main recharge mechanisms | The subsoils are dominated by gravels, which have high rates of infiltration. This is supported by the free draining nature of the land. Therefore recharge is generated from rainfall that falls directly on the groundwater body. A representative value for the proportion of runoff generated from effective rainfall is estimated at 20%. | | |
| | Est. recharge rates | [Information to be added at a later date] | | |
| Discharge | Springs and large known abstractions | None | | |
| | Main discharge mechanisms | The dominant types of discharge mechanisms in this groundwater body are likely to be baseflow to streams and seepages at the extremities of the sand and gravel deposit. Springs are likely to occur where the ground slope becomes very gentle or where the subsoils change from gravels to peat or boulder clay downstream. | | |
| | Hydrochemical Signature | The deposits in this aquifer are Calcareous . Hydrochemical analyses are expected to show that the water is moderately hard and has high electrical conductivity values, typical of those from limestones or sand & gravel deposits. | | |
| Groundwater Flow Paths | | Water levels are estimated to be in the region of 3-7 m below ground level. Groundwater gradients in sand & gravel are expected to be quite flat. Data from other parts of the country indicate that gradients in gravel aquifers are in the order of 0.002 to 0.004. Groundwater flow through the aquifer is diffuse. The direction of groundwater flow will be towards the River Moyle and also towards the sinkhole thought to be located in this area. | | |
| Groundwater & surface water interactions | | In this area and also a large area to the northeast there is a very low density of surface drainage features. This results from the area being underlain by permeable gravel subsoils and a Regionally Important Karstic Aquifer. A swallow hole is located at the center of the body. | | |
| Conceptual model | Sand/gravel aquifers are generally unconfined (no buried subsoil aquifers known) and are usually in continuity with the underlying strata. The thickness of the saturated zone determines the well yield. As the subsoils have not been mapped in detail, it is difficult to define the true extent and thickness of potential aquifers. The groundwater body is considered to be a locally important gravel aquifer. There are no overlying deposits and therefore a high proportion of effective rainfall will infiltrate through the permeable deposits to the water table. This also means that the vulnerability of the groundwater resource is high. The groundwater flow will be diffuse and the direction of groundwater flow is to the southeast in the direction of the Moyle river and also to the location of the sinkhole in this area. The groundwater body will discharge as baseflow to the associated surface water bodies and also as seepages and springs. | | | |
| Attachments | None | | | |
| Instrumentation | Stream gauge: None Borehole Hydrograph: None EPA Representative Monitoring boreholes: None | | | |
| Information Sources | Daly D, Keegan M, Wright G (2001) <i>County Tipperary (South Riding) Groundwater Protection Scheme</i> . Final Report to Tipperary (South Riding) County Council. Geological Survey of Ireland. | | | |
| Disclaimer | Note that all calculation and interpretations presented in this report represent estimations based on the information sources described above and established hydrogeological formulae | | | |