

### Mount William GWB: Summary of Initial Characterisation.

Hydrometric Area Local Authority		Associated surface water bodies	Associated terrestrial ecosystems	Area (km <sup>2</sup> )
16 – Suir Co. South Tipperary.		Fidaghta, Multeen	Greenane Marsh	6.7
<b>Topography</b>		This gravel deposit forms an area of higher elevation extending to the northeast of Tipperary town. The elevations range up to 120m OD. The drainage divide between the Shannon and South Eastern RBD divides this gravel deposit into two groundwater bodies.		
<b>Geology and Aquifers</b>	Aquifer type(s) Main aquifer lithologies	<b>Lg: Locally Important Sand and Gravel Aquifer</b> <b>Sand and Gravel</b>		
	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 tend to be about 0.15, based on porosity values other parts of the country.		
	Thickness	The sands and gravels in South Tipperary are generally thin (< 10m) except in a few areas in the central region around Tipperary town.		
<b>Overlying Strata</b>	Lithologies	None		
	Thickness			
	% area aquifer near surface	High		
	Vulnerability	High		
<b>Recharge</b>	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. The proportion of runoff generated from effective rainfall is estimated to be less than 20%.		
	Est. recharge	[Information to be added at a later date]		
<b>Discharge</b>	Springs and large known abstractions	Aileen Creameries (25 m <sup>3</sup> /d)		
	Main discharge mechanisms	Numerous springs discharge from limestone aquifers via through these deposits, e.g. at Rathcoole (S 219 137).		
	Hydrochemical Signature	The deposits in this aquifer are <b>Calcareous</b> . Hydrochemical analyses are expected to show that the water is moderately hard and has high electrical conductivity, typical of limestones or sand & gravel deposits.		
<b>Groundwater Flow Paths</b>		The water table in the sand/gravel aquifers is usually within 5 m of ground level and its annual fluctuation less than 1m. Water levels are close to the ground surface in the low-lying area in the vicinity of springs and at the spring discharge points the water level is at ground surface. 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 and the direction of groundwater flow is to the northeast in the direction of the Multeen river.		
<b>Groundwater &amp; surface water interactions</b>		It is expected that the aquifer contributes significant baseflow to the rivers which cross the groundwater body. The groundwater level in the aquifer will be directly related to the river stage. Also the permeable deposits will permit bank storage for the river, which is often responsible for a reduction in the severity of flood peaks in the river.		
<b>Conceptual model</b>	The sand/gravel aquifers are generally unconfined (no buried subsoil aquifers are 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 northeast in the direction of the Multeen river. The groundwater body will discharge as baseflow to the associated surface water bodies and also as seepages and springs.			
<b>Attachments</b>	None			
<b>Instrumentation</b>	Stream gauge: None Borehole Hydrograph: None EPA Representative Monitoring boreholes: None			
<b>Information Sources</b>	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.			
<b>Disclaimer</b>	Note that all calculation and interpretations presented in this report represent estimations based on the information sources described above and established hydrogeological formulae			