

### Derrymore GWB: Summary of Initial Characterisation.

Hydrometric Area Local Authority		Associated surface water bodies	Associated terrestrial ecosystems	Area (km <sup>2</sup> )
15 – Nore Laois Co Co N. Tipperary Co Co		Nore	Monaincha Bog/Balaghmore Bog, Nore Valley Bogs.	27
<b>Topography</b>		The area of this ground water body is extremely flat. The gravel deposits lie at the very top of the Nore river catchment. The Nore flows from west to east over the gravel aquifer. There are some slightly more elevated areas to the west, north and south.		
<b>Geology and Aquifers</b>	Aquifer type(s)	Lg : Locally Important Sand and Gravel Aquifer		
	Main aquifer lithologies	Sand and Gravel. Particle size analyses of samples from a borehole showed the percentage of fines to be less than 4%.		
	Key structures.			
	Key properties	No site-specific data are available but permeability tends to be high in sand & gravels, often in the order of 20-70 m/d. Conservative estimates of the porosity of sand & gravel aquifers tend to be about 0.07-0.08, based on porosity values in other parts of the country.		
Thickness	The depth to bedrock is known to be at least 60 m in places.			
<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 rates	<i>[Information to be added at a later date]</i>		
<b>Discharge</b>	Springs and large known abstractions	Borris-in-Ossory WS - Townparks (193) & Derrin (500).		
	Main discharge mechanisms	The dominant types of discharge mechanisms in this groundwater body are likely to be baseflow to streams and seepages as springs at the extremities of the sand and gravel deposit.		
	Hydrochemical Signature	The sediments within this sand and gravel aquifer are expected to be <b>Calcareous</b> . The underlying bedrock is both limestone and sandstone but the upper layers of the sandstone are considered to have calcareous cement. <u>Although no data exist for this groundwater body the water is expected to be hard and to have high EC values.</u>		
<b>Groundwater Flow Paths</b>		The groundwater movement through this aquifer is diffuse intergranular flow. The direction of groundwater flow is to the east.		
<b>Groundwater &amp; surface water interactions</b>		Dry weather flow values at gauging station 15008 is low (0.3 l/s/km <sup>2</sup> ) but the catchment of this stream flow gauge also includes the flow of a stream from the south which does not flow over any significant aquifers and therefore would have a low base flow. It can therefore not be considered representative of the gravel aquifer.		
<b>Conceptual model</b>	This aquifer consists of the gravel deposits east of Borris-in-Ossory. They lie within a limestone valley between the south western foot of Slieve Bloom and Slieve Felim. A high proportion of rainfall occurring on the area of this aquifer will percolate to recharge the aquifer. As a result and in conjunction with the fact that there are no overlying impermeable subsoils, the total area of the aquifer is considered extremely vulnerable to pollution. Groundwater flow will be diffuse as the aquifer has primary permeability. Groundwater flow will be towards the River Nore where the groundwater will discharge as baseflow.			
<b>Attachments</b>	N / A			
<b>Instrumentation</b>	Stream gauge:15008 Borehole Hydrograph: None EPA Representative Monitoring boreholes: None			
<b>Information Sources</b>	N / A			
<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			