

Glenade GWB: Summary of Initial Characterisation.

Hydrometric Area Local Authority	Associated surface water features	Associated terrestrial ecosystem(s)	Area (km ²)
35 Leitrim Co. Co.		None	15
Topography	The GWB occupies a small area of the Dartry mountains, orientated NW-SW. The location and boundaries are given in Figure 1. The land surface is characterised by an upland plateau area, with elevations ranging from 120-480 mAOD. It is bounded to the northeast by a topographic divide which includes the divide between the Western and Borders RBD areas. It is bounded to the southwest by the karst limestones of the Glencar GWB. The GWB is drained by many streams that flow to the southwest.		
Geology and Aquifers	Aquifer categories	Lm: Locally important aquifer which is generally moderately productive. Ll: Locally important aquifer which is moderately productive only in local zones.	
	Main aquifer lithologies	Dinantian Sandstones dominate the GWB, with Dinantian Mixed Sandstones occupying a thin band along the edge of the productive sandstones.	
	Key structures	The beds are relatively undisturbed, with no major folds in the area. NE-SW trending faults cross the southern end of the GWB.	
	Key properties	There are no data for the GWB. In general, Dinantian Sandstones, given their dominant sandstone lithology, which generally results in a higher fissure permeability, has the potential to be a transmissive aquifer. Transmissivity estimates are in the order of 100-120 m ² /d. In the vicinity of faults, transmissivity may be higher. Storativity in the aquifer is expected to be relatively high, in the order of 2%. There are no data to calculate gradients but these are expected to be greater than 0.005.	
	Thickness	Most groundwater flux is likely to be in the upper part of the aquifer, comprising three broad zones: a zone comprising a broken and weathered zone typically less than 3 m thick; a zone of interconnected fissuring up to 40 m thick; and a zone of isolated poorly connected fissuring typically less than 150 m. Fissure permeability is generally expected to be more developed in the top 20 to 30 metres of fractured weathered rock and close to fault zones.	
Overlying Strata	Lithologies	Peat is the predominant subsoil.	
	Thickness	There are no depth to bedrock data available. Rock outcrops are present on the plateaux.	
	% area aquifer near surface	<i>[Information to be added at a later date]</i>	
	Vulnerability	<i>[Information to be added at a later date]</i>	
Recharge	Main recharge mechanisms	Diffuse recharge occurs via rainfall percolating through permeable subsoil and rock outcrops. Due to the peat, a high proportion of the available recharge will discharge to the streams.	
	Est. recharge rates	<i>[Information to be added at a later date]</i>	
Discharge	Large springs and high yielding wells (m³/d)	None identified	
	Main discharge mechanisms	The main discharges are to small springs, streams and lakes.	
	Hydrochemical Signature	There are no data available but is expected to have a calcium bicarbonate signature.	
Groundwater Flow Paths		Groundwater flow is expected to be concentrated in fractured and weathered zones and in the vicinity of fault zones. Flow paths can be expected to be relatively long, and are likely to be up to 2000 m. Groundwater flow directions are expected to follow topography, generally toward the coast.	
Groundwater & Surface water interactions		Groundwater will contribute baseflow to the streams and rivers.	

1st Draft Glenade GWB Description August 2004

Conceptual model	<ul style="list-style-type: none"> • The GWB occupies a small area of the Dartry mountains, orientated NW-SW. The land surface is characterised by an upland plateaux area, with elevations ranging from 120-480 mAOD. • It is bounded to the northeast by a topographic divide which includes the divide between the Western and Borders RBD areas. It is bounded to the southwest by the karst limestones of the Glencar GWB. The GWB is drained by many streams that flow to the southwest. • The GWB is predominantly occupied by moderately productive fissured aquifers (Lm). • Transmissivity estimates are in the order of 100-120 m²/d and are likely to be higher in the vicinity of faults. Storativity is in the range of 1-2%. • Most groundwater flux is likely to be in the upper part of the aquifer. • Recharge occurs via diffuse mechanisms. Due to the peat, a high proportion of the available recharge will discharge to the streams. • The main discharges are to springs, streams and lakes. • The groundwater is expected to have calcium bicarbonate signature. • There is a high degree of interconnection between groundwater and surface water.
Attachments	Figure 1.
Instrumentation	Stream gauges: None EPA Water Level Monitoring boreholes: None EPA Representative Monitoring points: None
Information Sources	MacDermot, C.V. Long C.B. and Harney S.J (1996) <i>Geology of Sligo-Leitrim: A geological description of Sligo, Leitrim and adjoining parts of Cavan, Fermanagh, Mayo and Roscommon, to accompany bedrock geology 1:100,000 scale map, Sheet 7, Sligo - Leitrim.</i> Geological Survey of Ireland, 100pp.
Disclaimer	Note that all calculation and interpretations presented in this report represent estimations based on the information sources described above and established hydrogeological formulae.

Figure 1 Location and Boundaries of GWB

