

Riverstown: Summary of Initial Characterisation.

Hydrometric Area Local Authority	Associated surface water bodies	Associated terrestrial ecosystem(s)	Area (km²)
35 Sligo / Leitrim Co. Co.	River: Douglas.	None	20
Topography	The GWB occupies an area, in the vicinity of Riverstown, located on the north western flanks of the upland area to the northwest of L. Allen. Elevations range from 70-390 mAOD. Figure 1 shows the location and boundaries. The GWB is bounded to the north and west by the Pure Bedded Limestones of the Ballymote GWB and to the east by a surface water catchment divide which includes the division of the Shannon and Western RBD areas. It is a south western extension of the Belhavel Lough GWB located on the eastern side of the GWB. The principal drainage is to the west.		
Geology and Aquifers	Aquifer categories	L1: Locally important aquifer which is moderately productive only in local zones.	
	Main aquifer lithologies	Dinantian Shales and Limestones, Dinantian Pure Unbedded Limestone.	
	Key structures	The key trend is NE-SW, parallel to the northern boundary. The rock units are gently dipping to the east.	
	Key properties	No data on hydrogeological properties specific to this GWB are available. Transmissivity is expected to be in the range of 2-20 m ² /d across the GWB, however, in the vicinity of faults, transmissivity may be higher. Storativity is expected to be low (<0.5%). The data are inadequate to calculate groundwater gradients. These are expected to be greater than 0.005.	
	Thickness	Most groundwater flux is likely to be in the uppermost part of the aquifer; comprising a broken and weathered zone typically less than 3 m thick; a zone of interconnected fissuring 10-15 m thick; and a zone of isolated poorly connected fissuring typically less than 150 m.	
Overlying Strata	Lithologies	Till is the dominant subsoil type, with drumlins occupying most of the area. Cutover peat occupies the areas between the drumlins.	
	Thickness	There are no depth to bedrock data available, however, subsoil is likely to be thinnest on upland areas. Rock outcrops occurs predominantly on the mountain tops and upper slopes.	
	% 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 the subsoil and rock outcrops. Due to the low permeability of much of the aquifers, a high proportion of the available recharge will discharge to the streams. In addition, the steep slopes in the higher relief areas promote surface runoff. The stream density is high, indicating the high proportion of surface runoff.	
	Est. recharge rates	<i>[Information to be added at a later date]</i>	
Discharge	Springs and large known abstractions (m³/d)	None identified. <i>[More Information to be added at a later date]</i>	
	Main discharge mechanisms	The main groundwater discharges are to the streams, rivers and lakes. Small springs and seeps are likely to issue at the stream heads and along their course. The generally poor aquifer properties indicate that the baseflow component of total streamflow is likely to be low.	
	Hydrochemical Signature	No relevant hydrochemical data are available in this GWB for assessment. The GWB is composed primarily of Dinantian Pure Unbedded Limestones. Groundwater is likely to have a calcium-bicarbonate signature and expected to be hard with high alkalinity. Both iron and manganese can exceed allowable concentrations, these components coming from the shales.	
Groundwater Flow Paths	Groundwater flow is expected to be concentrated in fractured and weathered zones and in the vicinity of fault zones. Flow paths are likely to be short, up to 150 m, with groundwater discharging rapidly to nearby streams and small springs. Flow directions are expected to follow topography, generally to the west.		
Groundwater & Surface water interactions	Groundwater will discharge locally to streams and rivers crossing the aquifer and also to small springs and seeps. Owing to the poor productivity of the aquifers in this body it is unlikely that any major groundwater - surface water interactions occur. Baseflow to rivers and streams is likely to be relatively low.		

Conceptual model	<ul style="list-style-type: none"> • The GWB occupies an area, in the vicinity of Riverstown, located on the north western flanks of the upland area to the northwest of L. Allen. Elevations range from 70-390 mAOD. • The GWB is bounded to the north and west by the Pure Bedded Limestones of the Ballymote GWB and to the east by a surface water catchment divide which includes the division of the Shannon and Western RBD areas. The principal drainage is to the west. • The GWB is composed of low transmissivity rocks and storativity is expected to be low. • Groundwater flow will be concentrated in fractured and weathered zones and in the vicinity of fault zones. • Diffuse recharge occurs via rainfall percolating through the subsoil and rock outcrops. Due to the low permeability of much of the aquifers, a high proportion of the available recharge will discharge to the streams. • Flow paths are likely to be up to 150 m with groundwater discharging rapidly to nearby streams and small springs and flow directions are expected to follow topography.
Attachments	Table 1 and 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

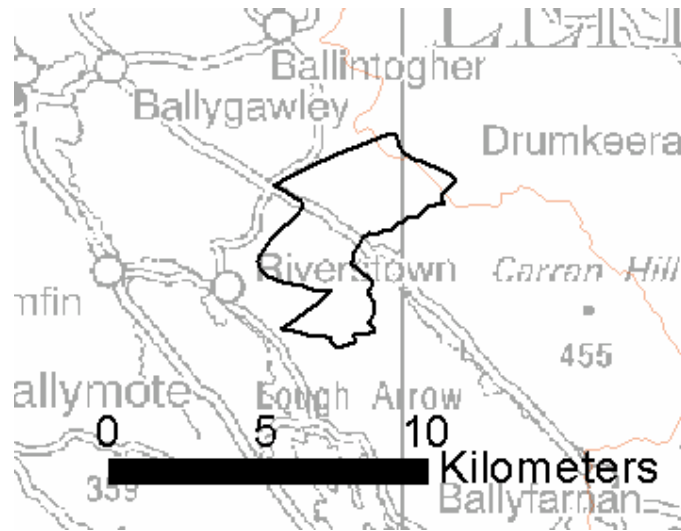


Table 1. List of Rock Units in GWB

Rock unit name and code	Description	Rock unit group	Aquifer Classification
Lisgorman Shales Formation (LG)	Thin bedded calcareous shale, limestone	Dinantian Shales and Limestones	L1
Bricklieve Limestone Formation (mkBKl)	Bioclastic cherty limestone	Dinantian Upper Unbedded Limestones	L1