

Ballingarry GWB: Summary of Initial Characterisation.

Hydrometric Area Local Authority		Associated surface water bodies	Associated terrestrial ecosystems	Area (km ²)
15 – Nore Laois, Kilkenny, S. Tipperary		Owveg, Cloghnagh, Castlecomer Stream, Dinin, Muckalee, Arigna, Munster, King's, Ballintaggart Stream, Bregagh, Nore, Brownstown Stream,	Dunmore Cave	412
Topography		This groundwater body contains the Slieveardagh Hills and the lower southwestern areas of the Castlecomer Plateau. There is a drainage divide along the Slieveardagh Hills. Water flows north to the Erkina river, which then flows east to the Nore. The Nore then flows south over this groundwater body between the Slieveardagh Hills and the Castlecomer Plateau. Further downstream the Nore meets the Kings River which has collected the south flowing tributaries from the Slieveardagh Hills.		
Geology and Aquifers	Aquifer type(s)	PI – Poor Aquifer, generally unproductive except for local zones Pu – Poor Aquifer, generally unproductive		
	Main aquifer lithologies	BE - Bregaun Flagstone Formation - Thick-bedded flaggy sandstones and siltstones KN - Killeshin Siltstone Formation – clayey siltstone and silty mudstone MC - Moyadd Coal Formation - Black shales, siltstones and occasional sandstone		
	Key structures.	There are no significant structural features which would have an important effect on the groundwater flow regime.		
	Key properties	No information is available on the hydrogeological properties of this groundwater body. Estimated transmissivities can be considered to range 1 – 6m ² /d.		
	Thickness	Effective thickness is not expected to be large but the bedrock may permeable to depths of around 25m in some areas.		
Overlying Strata	Lithologies	Glacial till with significant areas where rock is close to surface. There are also some important gravel aquifers overlying this groundwater body, which are considered as separated groundwater bodies.		
	Thickness	Thickness is greater in the west where it is typically <3m but there are larger areas where it is >1m. To the east the rock is close to surface over almost all of the area.		
	% area aquifer near surface	70%		
	Vulnerability	The vulnerability is mixed between EXTREME and HIGH to the southwest. In the east the area is almost entirely EXTREME.		
Recharge	Main recharge mechanisms	Most recharge to this groundwater body will occur in two main areas: firstly in the southwest along the peaks of the Slieveardagh Hills and secondly in the elevated areas of the Castlecomer Plateau in the northeast. In other areas the thickness and permeability can virtually prohibit water reaching the bedrock. Potential recharge may be significantly higher than actual recharge since the bedrock is not considered to be permeable and it is likely that a large proportion will run off to adjacent rivers.		
	Est. recharge rates	<i>[Information will be added at a later date]</i>		
Discharge	Springs and large known abstractions	Clonmantagh (Spring), Ballingarry (Presentation Convent - 30), Briska WS (8),		
	Main discharge mechanisms	Discharge from this ground water body will occur locally because no regional flow system is expected to exist. Discharge will be to the local streams as baseflow.		
	Hydrochemical Signature	The bedrock strata of this groundwater body are Siliceous .		
Groundwater Flow Paths		Groundwater flow paths in this area are considered to be short because the bedrock is not considered to constitute a major aquifer. Therefore it is likely that most groundwater flow circulates in the upper tens of metres, recharging and discharging in local zones. The age of the groundwater is considered to be young.		
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	This groundwater body consists of the Wesphalian shales in the Nore Valley, extending from the Slieveardagh Hills to the Castlecomer Plateau. The groundwater body stretches the whole width of the Nore River basin. The groundwater development and monitoring in this area is concentrated on the gravel aquifers which overly the body. Flow within the bedrock will not be very large and will be constricted to the upper few metres of the bedrock. Recharge and discharge will occur locally to surface water features. This groundwater body is considered to be extremely vulnerable.			

Attachments	
Instrumentation	Stream gauge: 15022 Borehole Hydrograph: none EPA Representative Monitoring boreholes: Note all monitoring points and most sources are in overlying gravel aquifers.
Information Sources	
Disclaimer	Note that all calculation and interpretations presented in this report represent estimations based on the information sources described above and established hydrogeological formulae