

Enniscorthy GWB: Summary of Initial Characterisation.

Hydrometric Area Local Authority	Associated surface water bodies	Associated terrestrial ecosystems	Area (km ²)
12 – The Slaney Wexford Co Co	The Slaney, Tinnacross Stream, Corbally Stream, Urrin, Boro, Bann, Tinnokilla scheme	The Slaney River, Ballynabarney Wood	213
Topography		This groundwater body lies in Co. Wexford, with the town of Enniscorthy at its centre. Its eastern boundary is defined by Carrigroe Hill at 230m OD. West of the Slaney the boundary is defined by a peak of 166m OD 2km southwest of Clonroche. The lowest point in this groundwater body is the outflow point of the Slaney river at less than 10m OD. The area is mostly free draining with patches of poorer drainage where permeability of the subsoil is reduced.	
Geology and Aquifers	Aquifer type(s)	Rf: Regionally Important Fractured Aquifer. There are small, enclosed portions of the groundwater body that have poorer water bearing properties and are classified as Pl: Poor aquifer, generally unproductive except in local zones.	
	Main aquifer lithologies	Campile Formation (CA) Rhyolitic volcanics, grey & brown slates. This rock contains areas of felsic volcanic rock which are believed to be the main water bearing components.	
	Key structures.	Highly fractured and broken due to folding and faulting in the Caledonian Orogeny which formed the Campile Syncline. Superimposed upon this are a series of minor folds giving rise to pronounced cleavage. The crystalline volcanic rocks will have ruptured under the mountain building forces that affected the whole area.	
	Key properties	Although there are no data from the area of this groundwater body, pumping tests carried out on the same geological formation near Gorey show transmissivities of 20-300 m ² /d. To the south, data from public supplies in Waterford at Ballykinsella and Ballyogarty indicate an average transmissivity of about 100 m ² /d.	
	Thickness	The effective thickness of this aquifer could be quite large. Well logging data from Kilkenny shows large fractures open at depths of 50m.	
Overlying Strata	Lithologies	Towards the southeast the Macamore Marl / Irish Sea Till is dominant. This is a clay based, lime rich till containing small pebbles and shells. Occasionally local lenses of sand and gravel are reported. To the west and north the Clogga till is more common. The Clogga till is a stone clay sand based till containing large angular cobbles and boulders chiefly of shale and granite.	
	Thickness	The subsoil thickness increases from a few metres at the east and west extremities of the groundwater body to tens of metres closer to the river.	
	% area aquifer near surface	<i>[Information will be added at a later date]</i>	
	Vulnerability	<i>[Information will be added at a later date]</i>	
Recharge	Main recharge mechanisms	Recharge will most likely near the eastern and western boundaries of the groundwater body, where there is a reduced soil cover in the uplands.	
	Est. recharge rates	<i>[Information will be added at a later date]</i>	
Discharge	Springs and large known abstractions (m ³ /d)	Boreholes at Killagoley and Moyne service the Enniscorthy/Moyne public water supply scheme, pumping at 600 and 300 m ³ /d respectively. To the extreme northeast Camolin public supply abstracts 60m ³ /d. EPA – Camolin(91), The Harrow, Boolavogue, Monageer, Enniscorthy(Clonhaston), The Moyne (Enniscorthy - 200), Donohoe. L (Vinegar Hill – 30), Killagoley (Enniscorthy), Roche Gibney Ltd (Enniscorthy - 90), Davidstown H.S., Edermine, Bree(100), Galbally(10), Chapel, St. Francis's Well (Spring), Clonroche(130),	
	Main discharge mechanisms	The main discharges in this area are to the associated surface water bodies and most importantly the Slaney River.	
	Hydrochemical Signature	EPA monitoring show that the water is slightly hard with average values of 135 mg/l as CaCO ₃ . Average electrical conductivity values are 384 µs/cm. Such low mineralized values have been observed in similar Ordovician siliceous aquifers elsewhere.	
Groundwater Flow Paths		These rocks are devoid of intergranular permeability therefore groundwater flow must occur in the fractures caused by deformation. There is probably a regional groundwater flow regime pattern present. Water will travel from the recharging areas in the east and west to the main discharge areas along the Slaney River in the centre of the body.	
Groundwater and Surface water interaction		Water table is controlled by the Slaney River, which is the main discharge area for the river.	
Conceptual model	This groundwater body is defined to the north and south by the extent of the Campile Formation, to the east and west by the catchment boundary of the Slaney River. Regional flow through the aquifer is likely to be towards the Slaney River at the centre of the groundwater body. Greater flow in this aquifer is likely along fractures/faults, in areas of volcanic rocks and near the surface in the weathered zone.		

Attachments	
Instrumentation	Stream gauge: 12002, 12015, 12016, 12061, Borehole Hydrograph: none EPA Representative Monitoring boreholes: Camolin WS (#8 - T075523), 113, 11, 12, 6, 45,
Information Sources	Matthew Hudson, Donal Daly, Paul Johnston & Sara Duffy (1998) Co. Waterford Groundwater Protection Scheme. Cullen, K. T. (1999?) Gorey Regional Water Supply Scheme Environmental Impact Statement. Gardiner, M.J. & Ryan, P. (1964) Soils of County Wexford. National Soil Survey of Ireland, An Foras Taluntais, Dublin.
Disclaimer	Note that all calculation and interpretations presented in this report represent estimations based on the information sources described above and established hydrogeological formulae