

Bridgetown GWB: Summary of Initial Characterisation.

| Hydrometric Area Local Authority | | Associated surface water bodies | Associated terrestrial ecosystems | Area (km ²) |
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| 13 –Coastal & 12 – Suir Wexford Co Co | | Bridgetown | Wexford Slobs and Harbour, Ballyteige Burrow, Tacumshin Lake | 137 |
| Topography | | The Wexford Harbour slobs and to the west the Irish and Ballyteige/Kilmore slobs are exceedingly flat. The drainage divide between Hydrometric areas 13 and 12 runs down the middle of this groundwater body. There is little change in elevation throughout this groundwater body, the highest elevations being around 30m OD. | | |
| Geology and Aquifers | Aquifer type(s) | PI – Generally unproductive except for local zones. | | |
| | Main aquifer lithologies | This groundwater body contains some of the oldest (GPG – Precambrian >545 My old) and youngest (KG – Permo-Triassic 250 My old) rocks in the SE (and indeed the country) directly in contact with each other. BCG : Ballycogly Group - Mylonites with metasedimentary enclaves GPG : Greenore Point Group - Foliated amphibolites with minor schists KQG : Kilmore Quay Group - Banded quartzo-feldspathic paragneisses KG : Killag Formation - Coarse conglomerates, siltstones & sandstones St : Saltees Granite - Foliated granite with xenoliths (fragments of surrounding rocks) Cs : Carnsore Granite - Pink biotite granite with xenoliths (fragments of surrounding rocks) | | |
| | Key structures. | The body contains a thrust fault which brings the Cambrian rocks up against the Precambrian rocks, running SW to NE. There are also a series of faults running in a roughly N-S direction. | | |
| | Key properties | No information is available on the hydrogeological properties of these rocks. Estimated transmissivities can be considered to range 1 – 6m ² /d. | | |
| | Thickness | The effective thickness of this aquifer may be only about 15 to 30m. | | |
| Overlying Strata | Lithologies | There is a variety of overlying subsoils. Estuarine deposits of post-glacial origin are found at Wexford and Kilmore slobs. To the west and south of the Wexford Harbour slobs is the Wexford gravel GWB, consisting of well sorted and well stratified sand and gravel, but little information is available regarding their vertical relationship with the enclosing marls. The Macamore Member/Irish Sea Till overlies the majority of the area. The texture of the till varies widely, ranging from clays to clay loam and loams. The clays are found around the coast and extend for some kilometres inland and give rise to some very poor drainage. | | |
| | Thickness | There are very few recorded wells with a depth to bedrock of less than 10m in this area. | | |
| | % 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 | There is likely to be very little recharge to this groundwater body because of the thick layer of almost impermeable till overlying it. Where there are sand and gravel deposits these represent the most likely location for recharge although the gravel layers appear to be underlain by the till so there may be no hydraulic connection between the gravel and the bedrock. | | |
| | Est. recharge rates | <i>[Information will be added at a later date]</i> | | |
| Discharge | Springs and large known abstractions (m ³ /d) | Rosslare Harbour WS, Kilmore Quay WS? Need grid refs from Wexford. | | |
| | Main discharge mechanisms | Discharge in this groundwater body will be to the associated surface water bodies. Discharge is not expected to be large as there is very little recharge. | | |
| | Hydrochemical Signature | There is no available information. The bedrock strata of this groundwater body are Siliceous . | | |
| Groundwater Flow Paths | | Groundwater flowpaths through this groundwater body are short. The travel time of any recharging waters will be small and therefore the age of these groundwaters is young. The distance travelled will be short and will most likely be the distance to the closest surface water body. | | |
| Groundwater & surface water interactions | | The interaction between groundwater and surface water is uncertain due to the thickness of subsoil. If there is a large thickness of impermeable subsoil there will be little or no interaction. If the river cuts through the overlying subsoil to the bedrock there will be discharge from the groundwater body to the river, which will provide baseflow. | | |

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| Conceptual model | The groundwater body is defined to the northwest by the contact between the Wexford Formation and the Cambrian and Permo-Triassic rocks. Elsewhere the coast defines the boundary. This groundwater body is a poor aquifer and cannot be expected to produce large discharges for public supply. There is minimal recharge through the thick overburden. Groundwater flow is in short shallow flow paths in the upper 10m of the weathered zone through features and joints. Since recharge is minimal, only small discharge is expected which will occur along the coast and to surface water bodies where the subsoil thickness and permeability allow hydraulic connectivity. |
| Attachments | None |
| Instrumentation | Stream gauge: 13081, 12065 Borehole Hydrograph: none EPA Representative Monitoring boreholes: None |
| Information Sources | Cullen, K.T. (1978) A Preliminary Hydrogeological Investigation of South County Wexford, Ireland. Unpublished MSc Thesis, University of Birmingham, UK. |
| Disclaimer | Note that all calculation and interpretations presented in this report represent estimations based on the information sources described above and established hydrogeological formulae |