

## CORK - COUNTY GEOLOGICAL SITE REPORT

<b>NAME OF SITE</b>	<b>Ballinatona, Meelin Spring</b>		
Other names used for site	Ballinatona Waterworks		
<b>IGH THEME</b>	<b>IGH16 Hydrogeology</b>		
<b>TOWNLAND(S)</b>	<b>Knockduff (E.D. Barleyhill)</b>		
<b>NEAREST TOWN/VILLAGE</b>	<b>Newmarket</b>		
<b>SIX INCH MAP NUMBER</b>	<b>14</b>		
<b>ITM CO-ORDINATES</b>	<b>528270E 612390N</b>		
<b>1:50,000 O.S. SHEET NUMBER</b>	<b>72</b>	<b>GSI BEDROCK 1:100,000 SHEET NO.</b>	<b>21</b>
<b>GIS CODE</b>	<b>CK003</b>		

### Outline Site Description

A warm spring and Public Groundwater Supply source by the Dalua River and R576 road.

### Geological System/Age and Primary Rock Type

The surface bedrock in the area is Mississippian (Upper Carboniferous, or Namurian) sandstone and shales of the Cloone Flagstone Formation. These rocks are part of the Shannon Group that comprise the lower part of the Namurian succession of the Shannon Trough. The springs issue from Mississippian (Lower Carboniferous) limestones. The hydrochemistry of the spring indicates that the water derives from a Carboniferous limestone aquifer. The Dinantian limestones outcrop at the surface in a set of small inliers occurring around Meelin and Taur.

### Main Geological or Geomorphological Interest

At a large spring at Ballinatona, near Meelin, mean water temperatures are a near-constant 13.5°C, even during periods of comparative drought and heavy rainfall. This water temperature is notably warmer than average groundwater temperatures in Ireland, which are in the order of 9°C - 11.5°C. The spring is one of several warm springs in north Cork – east Limerick region. Trinity Well, located 5 km to the south, has a mean temperature of c. 14.5°C. Daily discharge yields at Ballinatona are reported at c. 7,000 m<sup>3</sup>/d. The pH has a mean value of 7.4, which is compatible with a limestone aquifer source. The site comprises springs that issue in a marshy patch at the foot of a hill composed of Namurian sandstone, beside the Dalua River. Spring waters are piped into a pumping station. The springs are at the relatively high elevation of c. 200 m OD.

The warm springs of north Cork – east Limerick region tend to be associated with Carboniferous Limestone, and it is probable that limestone occurs at relatively shallow depth beneath Ballinatona Spring (and Trinity Well). It is possible that east-west trending thrust faults allow the warm waters to rise from depth. The influence of fault control has been suggested due to the relatively high elevations of these warm springs. The hydrochemistry of the springs indicates that they are all derived from Carboniferous limestone aquifers.

### Site Importance – County Geological Site

An important County Geological Site because it is a groundwater source of water for a public water supply scheme, and it is characterised as a warm water spring with a mean temperature of 13.5°C.

### Management/promotion issues

Operated by Cork County Council, the site is used as the water supply for Newmarket (Ballinatona Regional Water Supply Scheme). The site is accessed from the R576 Newmarket to Ballydesmond road. Ballinatona (Spring1) is a national Groundwater Monitoring Station (GWIE\_SW\_G\_07005000002). The station is monitored by Cork County Council, and is situated within the South Western River Basin District (RBD), and within Rathmore Groundwater Body (GWB IE\_SW\_G\_070). There is a Met Eireann Rainfall station present at the site. In 2021, Irish Water

reported works in progress to connect the Kiskeam public water supply to the Ballinatonna Public Water Supply Scheme.



Springs in marshy area to north (left) of pumping station complex.



Gated entrance to Ballinatonna Waterworks on R576 road.



Ballinatonna Waterworks Pumping Station.

