

CORK - COUNTY GEOLOGICAL SITE REPORT

NAME OF SITE	Dower Spring		
Other names used for site			
IGH THEME	IGH16 Hydrogeology, IGH8 Carboniferous, IGH1 Karst		
TOWNLAND(S)	Dower		
NEAREST TOWN/VILLAGE	Castlemartyr		
SIX INCH MAP NUMBER	77		
ITM CO-ORDINATES	597910E 572990N		
1:50,000 O.S. SHEET NUMBER	81	GSI BEDROCK 1:100,000 SHEET NO.	25
GIS CODE	CK044		

Outline Site Description

Spring emerging from mouth of cave in low limestone cliff, beside minor road, at site of Irish Water water treatment and pumping station.

Geological System/Age and Primary Rock Type

Bedrock is Lower Carboniferous (Mississippian) Waulsortian Limestone (c. 350 million years) that has undergone karstification in more recent Cenozoic times.

Main Geological or Geomorphological Interest

Dower Spring is a large-volume spring that serves as a drinking water source in the East Cork region. It emerges from a regionally important bedrock aquifer that is formed mainly of Waulsortian Limestone but also includes the limestone of the Little Island Formation and the Cork Red Marble Formation. The limestone formations have undergone karstification and flow through the aquifer is dominantly conduit flow. There are several karst features in the area and two, Poulnahorka Cave 700 m west in Castlemartyr, and Ballyvorisheen swallow hole, 1.7 km to the north, have been shown by dye-tracing to feed into Dower Spring. The Dower Cave was explored in the 1960s and 1980s but little progress was made upstream.

The mouth of the cave is at the northeast corner of the site, at the base of a low, overgrown cliff, above which is a minor public road. From the cave mouth a walled outflow channel, incorporating a thin-plate weir, runs along the northeast side of the site to form the Dower River, which flows into the Womanagh River 750 m to the southeast. Inlet pipes for the water treatment and pumping plant are in the mouth of the cave. The plant is housed on the southeast side of the site.

Site Importance – County Geological Site

This spring is one of the largest in Ireland. Annual average daily discharge rates were measured in 1979 and 1980 at 32,000 and 40,000 m³/day, respectively. It is worthy of recognition as a County Geological Site owing to its size, its importance to the region as a water source, and to the very detailed mapping and modelling that led to the delineation of its zone of contribution and the Whitegate-Dower Source Protection Zone in the early-2000s.

Management/promotion issues

The site is surrounded by a low wall that serves to keep livestock away from the mouth of the cave where the inlet pipes for the water plant are located. Otherwise, the site is readily accessible. As a regional water supply vulnerable to contamination, the general promotion of the locality is not recommended. General education about the vulnerability of karst groundwater supplies to pollution from septic tanks and agricultural slurry spills and bad spreading practices is highly advisable.



Dower Spring: view along road to east – opening to cave system is immediately below road to south (right) of telegraph pole. Plant building visible on right.



Dower Spring: view southwards of outflow channel from position adjacent to cave opening.



Dower Spring plant building.



Dower Spring: cave opening.

