

---

## FEATURE ARTICLE

---

### Water & Wells

by Paul Wiseman

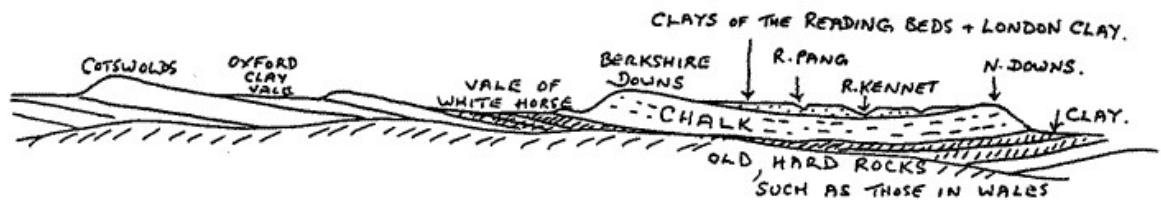
Rain – we take it for granted, and mostly it is a source of complaint in our lives. But without water to drink, wash, cook, and flush the toilet, we could not survive. In times gone past, a reliable source of water was a pre-requisite for a place of habitation and the locations of most villages and even individual dwellings can be related to the need to provide this most basic commodity.

This article explores the origins of water supply in East Ilsley and how our relationship with it has changed over the last couple of centuries.

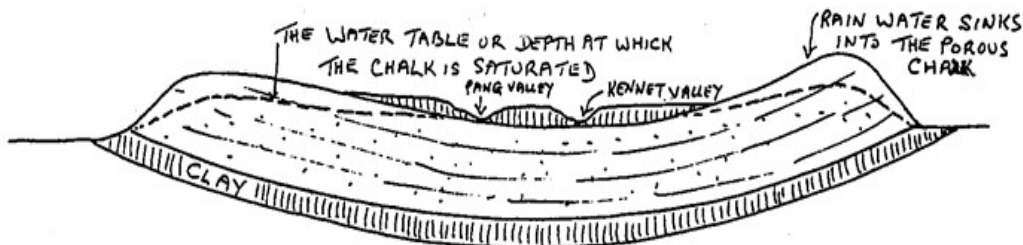
Previous researches into the effects of water upon the village have been conducted by Bob Moulton and Sue Burney, as reported in the spring 2008 Newsletter. Bob has investigated records of water depths in village boreholes, their correlation with local rainfall records, water-course changes and has made an excellent record of recent flood events.

Our most recent research is seeking to develop this theme a little further. We have started to establish a data base of known well locations within the village and are also endeavouring to research their construction and the lives of those who dug the wells.

But before we go down into the depths, where does our water actually come from? Before you answer: “Thames Water”, we’re talking geology here. We’ll all recognise from digging our gardens or walking the local fields that we live in an area of chalk. In fact the Berkshire Downs is the top layer of several layers of chalk deposited over the top of a layer of clay, itself lying on top of much older and harder rocks. Lying on top of the chalk in the Pang and Kennet valleys are further layers of clay.



The layers of chalk slope gradually to the south and east at a steady inclination. The thickness is also remarkably constant at about 300 metres, although the top most layer is around 70-100 m.



Clay is impervious to water, but chalk fractures easily and therefore absorbs water readily. Rainfall falling on the uplands of the Downs therefore drains and quickly settles to form a reservoir above the layer of clay. Although this drains gradually to the south and east, a fairly stable “water table” is formed below which the ground is saturated.

As a result of our geology, rain falling in the vicinity of East Ilsley rarely forms a stream (other than at times of flash flood), but instead sinks to the water table. Those with longer memories, or who have seen Bob’s photos will know that after prolonged wet weather, the water table can rise to the surface, creating an Upper Pang stream flowing from West Ilsley, along Abingdon Road through the pond and across the meadow to Compton. Further down the Pang valley beyond Bradfield the surface clay beneath the stream bed means that the Pang is permanently above the surface.

So, whether they understood the geology or not, in order to provide a reliable source of water, our forebears relied almost entirely upon hand-dug wells. It is understood that at one time over a hundred wells existed in East Ilsley, in which case most houses must have had their own supply. The quality of water provided was by all accounts very reliable and pure, as indicated by this extract from a 1902 Survey of Berkshire wells:

*“The unpolluted deep well waters from the chalk rank amongst the best and most wholesome with which we have become acquainted. They are almost invariably colourless, palatable, and brilliantly clear.”<sup>1</sup>*

The same source records physical details of many of the wells in Berkshire villages, including 22 in Basildon and one of 240 feet depth in Beedon, but sadly not for the Ilsleys or Compton.

One interesting fact is that although the surface ground level varies, the level of the underlying chalk and hence the water table is relatively flat, albeit sloping gradually to south east. Hence the depth of well reaching down to the bottom of the top chalk layer, necessary to be sure of a good supply even in times of relatively low rainfall, can be calculated quite reliably. At the low point of the village this is around 50 m, but at the top of the village near the old school house a considerably deeper well is required. In Aldworth, the well depths are over 110 metres!

Spare a thought for the poor workers who had to dig these wells – not only back-breaking activity, but also a potentially highly dangerous job. The risk of collapse was significant, and also of asphyxiation from collected carbon dioxide and methane. This extract from an 1849 treatise<sup>2</sup> on well digging explains:

*“Well-diggers, after attaining a certain depth, find the confined air very unpleasant and noxious. The carbonic acid from the breath, being specifically heavier than common air, soon stagnates at the bottom of the excavation. A pair of bellows or a fan blast should be used in such cases, and the air conveyed down the well in pipes; thin zinc ones answer the purpose very well, they are about two inches diameter. The depth of hole at which artificial supply of air is desirable will depend on the diameter of the well, and the position of the aperture. If it be open to the air, with no temporary shed or other erection over it, a supply may not be required, with a four feet excavation, till about*

---

<sup>1</sup> The Water Supply of Berkshire from Underground Sources, H Swindell, HMSO, 1902

<sup>2</sup> Rudimentary Treatise on well digging, boring and pumping, John Swindell, 1849

*130 feet from the surface. In this question, however, the extreme limits should not be sought for, as the sooner a plentiful supply is given the better, the workmen getting on more comfortably to themselves, and also much faster."*

The minimum width of well for hand-digging was around three feet but four feet was quite common. The method of construction varied depending upon the ground conditions. Dry lining with stone blocks or bricks was common, but once below the unstable surface deposits, and into the much more solid chalk, lining was generally un-necessary.

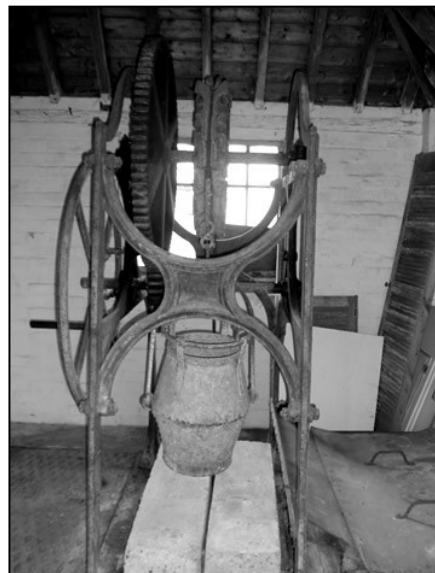
At this point a clear distinction should be made between wells and boreholes. The latter are as suggested by name not dug, but drilled or bored, and are therefore generally of much smaller diameter. These are normally used to check for depth of supply and expected ground conditions, but were in later years also used as a means of pumped water supply.

Two interesting historic stories of East Ilsley wells in editions of the Newbury Weekly News record two sad deaths in the 19<sup>th</sup> century. One was the result of an accident to poor Reuben Bartholomew aged 12 years, who was precipitated down a well to his death whilst attempting to raise water in 1874. Another story records the unsolved case of the body of a baby, discovered down another well adjoining Sunrise Cottage in 1896.

Our current research has sought to provide a record of locations of all known wells and boreholes in East Ilsley. Initially a simple visual survey picked up 14 wells, but our stand at last year's Sheep Fair elicited details of a further 18 wells, making 32 in total. In each case we have recorded whether they are open or capped, and are in the process of recording a precise grid reference so that future generations can locate them once again if covered. The deepest at 84 m is probably at Windmill Cottage, and still in use if you have the stamina for it!

We would be pleased to receive any further details of well locations, so please let neighbours and friends know that we are collecting them!

One of the most magnificent village wells in terms of the winding equipment is at the School House adjacent to the Primary School. As the picture indicates this is enclosed in its own building. The well was probably one of the later ones dug in the village, at the same time as the school and school house itself were built, and provided a supply for both schoolmaster and school children. It was still in use until the 1930s, and children at the school took turns to fetch the water from the well – evidently not as unpopular as might be expected – any excuse not to do algebra and spelling!



One interesting thought to ponder is what the future will hold for flows of water in our village, especially given the inevitable impact of climate change. We are told that this will have two main impacts for the UK climate – generally warmer and wetter winters and increased incidence of extreme storms. The storms are

likely to have a more immediate impact upon the village, with flash floods washing debris off the fields and blocking our drains and ditches. But the generally wetter winters may have a more significant impact in the longer term.

Sue's research has shown that when we have 6 monthly rainfalls exceeding about 500mm this leads to the surfacing of the water table through East Ilsley. In recent times this has been a less than one in ten year event, but could easily become more common-place. It is also interesting to note that the 1902 Survey recorded maximum and minimum rainfalls at many Berkshire locations in the period 1865 – 1890; the maximum annual rainfalls were generally around 800 – 900 mm; these suggest similar frequency of likely flood events.

We have records of water depth in the well at the back of Bartholomew's cottage going back to the 1930s. Unfortunately this series is temporarily suspended and we need someone with an interest in the subject to re-start the monthly readings.

Of course climate change and scarcity of fossil fuels may also place energy at a premium. The drive for sustainability may cause us to question the wisdom of pumping water supplies over long distances – I knew Thames Water would get into this article some how!

Who knows, maybe we will once again come to value our wells for their original purpose! I know where mine is – do you?