

Introduction

In this piece Jack McFarland examines the various schemes used in the city and catchment area over the years to supply water for homes and industry. As you will see the Creggan proved vital in this regard. The schemes are covered in chronological order. Much work was carried out by a Dr Henderson and Dr Patterson in relation to the early sources located within the city. Some of this work was used for this piece, particularly in relation to the early years.

Early Years:

As previously stated, Dr Henderson did a great deal of research on wells and spas during earlier times. I suspect that during the 17th century and early 18th centuries no formal type of analysis would have existed and the doctors relied on taste, odour and a visual inspection for clarity. They also believed that these primitive mineral waters held the cures for many ailments and health disorders.

Dr Henderson often quoted an earlier colleague, a Dr Patterson. Patterson, referring to early experiments on mineral water in the Rosses Bay area, described it thus: "The water is very limpid, not brisk or odourous, but communicates to the palate a pretty strong mineral flavour". From the results of his analysis the doctor was of the opinion that "the Rosses bay spring affords a pretty strong chalybeate (containing iron) water, capable of being converted to useful and medicinal purposes, especially by means of various artificial modifications, but that it will not bear carriage, nor keep long, as it does not seem to contain a sufficiency of the carbonic acid to preserve the mineral in solution".

Some streets in our city have clearly derived their names as a result of being a source of water many years ago e.g. Pump Street,

St Columb's Wells, Fountain Hill etc, to give but a few examples. Dr Henderson also makes reference to a very good well in London Street. He states:

"The well which is circular in form, is about 26 feet in depth, eight feet in diameter; and affords sufficient space in its interior to permit the descent of a workman on a ladder placed against the inner wall. The water issues from what seems to be a rock, and was said to have been, so far as naked eye appearances went, of fair quality when the well was first opened. The sides of the shaft are lined with dry stonework. About six feet from the bottom there is a wooden platform, supported on two crossbeams of white oak... As the staging and beams would interfere with the passage of buckets up and down the shaft, it is probable that the water was raised to the surface by means of a wooden pump. This well must have been regarded as a good source of water supply in former times; otherwise so much time and labour would not have been spent on it's construction".

The 1802 edition of the Rev. GV Sampson's "Statistical Survey of the county of Londonderry" contains a good description of several wells and so-called 'spas' in and around Derry. The first of the wells mentioned by Sampson was 'the Town Pump' at the intersection of Bishop Street and London Street. Due to the shortage of water in the summer of 1874 this well was brought into service to supplement the city supply. The second was a pump in the Bishop's Garden, but no analysis of the water is given. This must have been a deep well, for in a survey map of 1848, it is marked as a draw well. The next well referred to was the 'spring on the west strand' which yields 'a pure, soft water, very fit for dietary and culinary uses'. Another source of water supply was also situated on the west side of the river, and was known as the 'Old Spa Well'. According to Dr Patterson, 'if ever it contained any mineral impregnation it exhibits not a trace of the kind at present, but is tolerably soft water'.

A survey map of 1848 shows that springs and wells were fairly evenly distributed all over the city, being especially numerous in the areas outside the walls.

In 1808 and 1809 £15,583 9s9d was expended on a new water system. The water from the surrounding district was collected in a reservoir; 'Quay Brae Head' above the Waterside, and was conveyed in pipes across the old wooden bridge (built 1789-91) to a reservoir in Fountain Street, from which it flowed to the various mains supplying the city. At first the distributing pipes were chiefly made from trunks or stems of trees bored through the centre and joined together. The insecure and primitive variety of the joint meant loss by leakage was said to have been very considerable. Subsequently iron pipes were used instead.

In early 1814, due to severe weather conditions the city had to revert, for a time at least, to the former water supplies. Heavy falls of snow and an exceptionally keen frost saw the Foyle completely frozen over. When the thaw set in large blocks of ice from the upper reaches of the river were carried down by the current and could not, owing to their size, pass between the piers of the bridge. These masses gradually accumulated on the upper side of the structure, to equal in height the railing protecting the footpath. The force of an abnormally high flood, caused by the sudden melting of the snow, combined with a fierce gale and a strong ebb tide, exerted a huge pressure on the bridge. In the evening of the 6th February 1814, a large portion of the structure next to the Derry side, extending to about 350 feet, was carried away. This catastrophe would of course cause a temporary disconnection of the water supply derived from the reservoir on Fountain Hill.

In 1911, known as the year of the water famine, wells were sunk in the lower lying parts of the city. Although water was obtained it was in most cases distinctly brackish (slightly salted) in quality, thus showing that it was a mere filtrate from the Foyle; it could not, therefore, be used by manufacturers for trading purposes.

Water was also ferried by lorries and galvanised tanks from the Waterside to the Derry side to supplement supplies for industry etc.

Then and Now:

Ebrington P E School paid £4-19s-0d for water used between the period 1/4/1937 and 30/06/1938. The bill covering a similar period today would be £615.00.

Burngibbiagh River Scheme:

The original reservoirs at Corrody and Tamneymore, constructed by the corporation during the early 1900's, were originally fed from a network of streams and fireclay pipes laid through the higher parts of the townlands of Cromkill, Kittybane, Clondermott and Corrody. In 1913 Matthew Robinson, the City Engineer, got approval to augment the existing reservoirs at Corrody and Tamneymore. The scheme was designed to pump water from the Burngibbiagh river in time of low rainfall, when the normal pipes and streams flowing to Corrody and Tamneymore gave insufficient yield. An inlet pond, built near Clondermott church at Church Brae, pumped water through a 12" iron pipe to Corrody reservoir; a distance of approximately 1.3 miles (2 kilometres). A second 9" (225mm) fireclay pipe was then laid from Corrody reservoir to Tamneymore reservoir to augment flows in low lying areas of the Waterside.

Then and Now:

In 1936 a domestic 15mm water connection cost 12/6d inside the city boundary and 15/0d outside. A similar connection at present would cost some £170.00.

Creggan Reservoirs:

The upper and middle Creggan reservoirs (1849 and 1852) catered for a rapidly growing city. The catchment area for these reservoirs extended to some 640 acres (256 hectares) located mainly in the townlands of upper Springhill, Upper and lower Creevagh and Creggan. Landowners at that time included the Fosters, Tierneys, Rev. Crawford, Campbells and Chambers, some of whom still farm at these locations today. Again a series

of fireclay pipes and streams conveyed the water from source to the upper basin and in turn to the middle basin.

Creggan middle had a surface area of some 8 acres (3.2 hectares). On one occasion in the late 1960's the entire surface area was frozen over to a depth of 9" (225mm). The entire reservoir was turned into a uniquely different play area for the locals. On one visit at this time the author observed a young man riding his motor bicycle on the ice. He was very quickly removed and in no uncertain terms was told not to re-offend! In 1971 prolonged rain breached the dam wall separating the upper and middle basins, contaminating the middle basin. The reservoir was removed from service for some months until remedial work was completed.

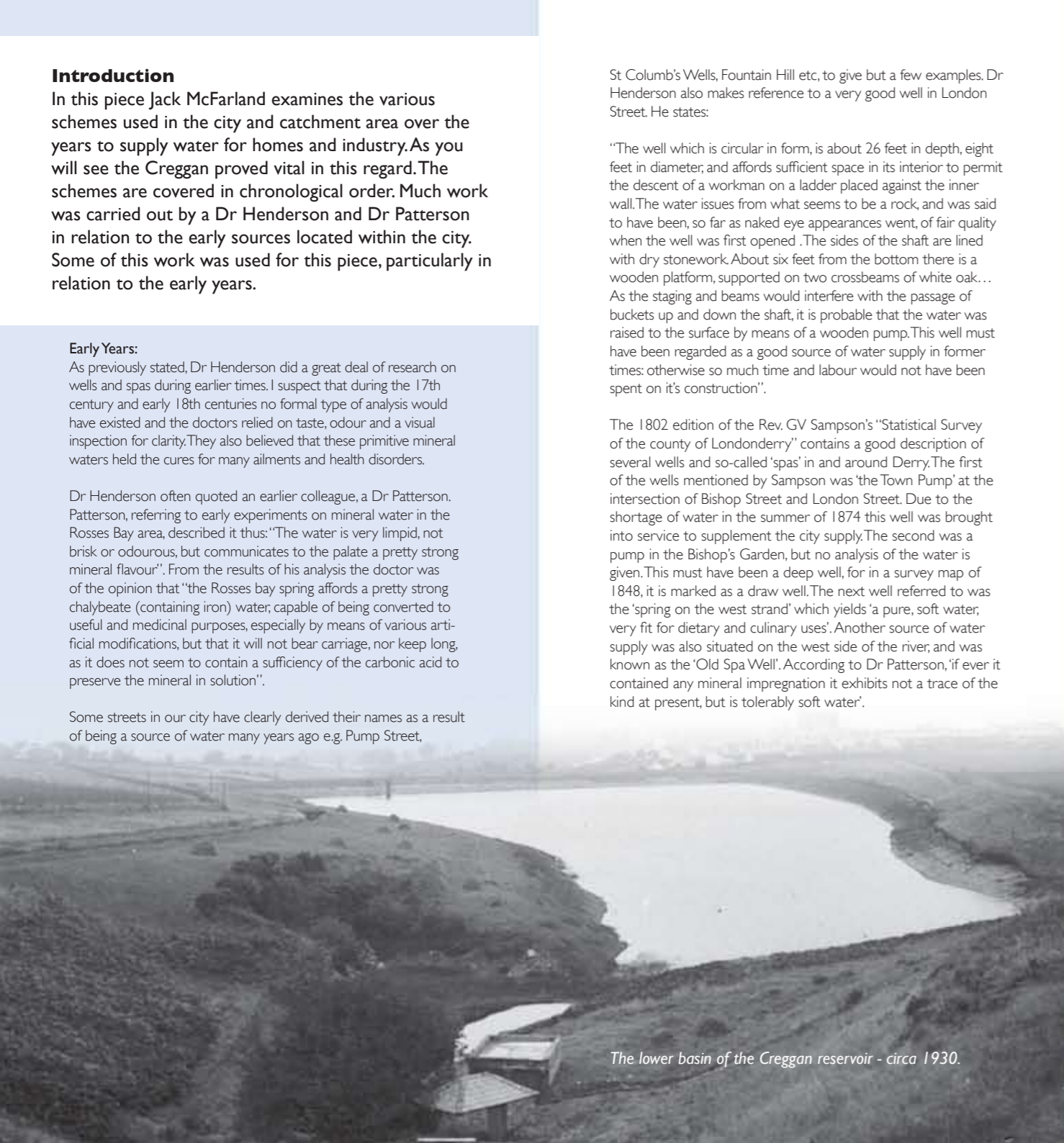
The lower basin built in the 1880's was used mainly for street washing purposes. Street washing was required due to the prominent use of horse and cart in Derry. By the early 1940's the horse and cart was no longer the preferred method of moving people and materials from one part of the city to another and the dam was no longer required. The Banagher scheme also provided a much needed source of water for the reservoirs at Creggan until 1990 when the open Creggan reservoirs were replaced by concrete service reservoirs located on the adjacent land. In the early 1990's the responsibility for all three open reservoirs was transferred to Derry City Council, leading to the opening of Glenowen Fisheries and later the Creggan Country Park.

Banagher Dam:

By 1917 the city was fast running out of water resources, especially with the large textile industry. Banagher Glen was identified as an ideal site for a new supply base. The site chose itself, as only one man lived in the proposed area to be flooded.

The access road (built 1918-26) is 3 miles long and only 9 feet (2.75 meters) wide. The main breast of the dam over the Altnaeglish Burn was started in the spring in 1931. During the construction period, which lasted until 1935, there were many slight accidents involving workers, and unfortunately one man was killed when struck by a falling plank whilst working at the bottom of the Dam wall.

The dam opened on 19th November 1935 with a crest length of 330 feet and a maximum height from the crest to the main foundations of 138 feet (42.1 metres). The cement for the dam wall was brought by train from Larne to Dungiven and had to be brought up the very steep mountainside by horse and cart. The average annual rainfall at the site is 57 inches and this, falling over the entire catchment of 1500 acres, produces on average approximately 3.5 million gallons of water daily. With a consumption of approximately 40 gallons per person per day the dam can supply a population of 87,500 persons.



The lower basin of the Creggan reservoir - circa 1930.



The Creggan reservoir as it looks today.

In the 1970's the water level was reduced by 10 feet for safety reasons. In 1985 an inspection by a dam expert showed that the dam wall was in need of strengthening. This involved the placing of 500,000 tons of rock against the dam wall and the reconstruction of the crest, completed in 1988 at a total cost of £2 million. The dam provides raw water supplies for the Caugh Hill Treatment works. At the works the water is purified and subsequently supplied to homes and industry in Derry, Limavady and surrounding districts by a series of pipelines.

Then and Now: The land purchased for Banagher Dam in the early 1900's cost 12/6d per acre. At present similar land would cost up to £800 per acre.

Banagher Filter House:

Work started on the construction of the Filter house in late 1929. The filters consisted of 21 closed cylinders some 9ft in diameter (2.75 metres) containing filtering sand, transported from Leighton Buzzard, Bedfordshire in England. All power was generated on site using piston wheels which provided DC current.

During the winter of 1963 a Mr W Logan and Mr J Kelly were both stranded at the filter house after a heavy snowstorm. Both men had to stay at the plant for almost a week as the snow outside was reported to be 6ft (2 metres deep). Food and other essentials had to be dropped by helicopter. The filter was in use until 1968 when the new filter house was constructed a short distance away at Caugh Hill.

Banagher Aqueduct:

The construction of the aqueduct began in the spring of 1927 and was completed 3 years later; a distance of 20.6 miles (33 kilometres). The pipes are mainly of cast iron and concrete. Amongst the features was a tunnel constructed at Corrody, some 450 metres long with a rectangular section of 1 metre by 1.5 metres.

Very few fish actually live in the reservoir due to problems with access and a lack of insect life in the cold water leading to a lack of food for the fish. The current supply should be fine for the foreseeable future. Although the population is growing in Derry the textile, yarn and linen industries have all gone.

Banagher Dam - circa 1930.



These were heavy consumers of water whilst many of the new industries like Seagate use very little supply and recycle their water on site.

Killea Reservoir:

Opened in the 1930's, this reservoir supplied water to the Creggan via a 12" cast iron pipe laid along a 250 ft (76 metres) contour of Creevagh and Glassagh Hills to a point on the Creggan Upper basin, which in turn fed an ever expanding city. In the late 1930's a branch pipe was also laid from the 12" pipe to supply the area between Bishop Street (without) and Foyle Road, at a total cost of £2,500.0s.0d.

The water from Killea is still of a very high quality and to this day requires a minimum of treatment. It is still in operation and until recent times supplied areas to the south of the city and also parts of Co. Donegal close to the border.

Faughan River Scheme:

In 1956 a group of industrialists became interested in the development of the old wartime aerodrome at Maydown. At around the same time a new power station was proposed for Coolkeeragh. Therefore a decision was made to investigate the development of a new water source for these industries and the subsequent domestic growth expected for the area. It was envisaged that a yield of some 5 million gallons per day (or 23 megalitres) would be required within four years to sustain demand.

Consulting engineers recommended abstraction of water from the river Faughan. River abstraction works were eventually built in 1959 on the banks of the river Faughan adjacent to Mobuoy bridge. This pumping station would transfer raw water to a treatment works on the adjacent high ground at Cammoney which commanded the supply area.

A modern view of Banagher Dam.



Coolkeeragh power station.



It was originally proposed that the source would be developed in three stages to meet projected demand. The Londonderry Area Plan published in March 1968 and later revised in October 1972 recommended sweeping changes in both Derry City and the surrounding rural areas. Two of the main recommendations contained in this plan were:-

- A major domestic and commercial extension to Derry city centred at Ballyarnett/Shantallow with associated industrial expansion at Springtown, Pennyburn and Culmore on the west bank of the Foyle.
- Extension of the 'Industrial Crescent' development at Maydown and Campsie on the east bank.

In order to provide an abundant supply of water for these demands stage II of the Faughan River Scheme was implemented to increase the capacity of Cammoney Treatment Works from 5 to 10 million gallons per day or 45 megalitres.

In order to convey the water the water from Cammoney on the east side of the Foyle to Ballyarnett/Shantallow on the west bank it was necessary to implement other major schemes, including land pipelines, twin submarine pipelines under the Foyle, pumping stations and service reservoirs etc. Cammoney was completely overhauled in 1996 using new methods of treatment and technology.



This pamphlet has been produced as part of the Creggan Country Park's 'Step Back in Time' Heritage Lottery funded project examining the history of the Creggan Country Park site and the wider Creggan area. A number of pamphlets covering subjects linked to the Creggan Country Park heritage are available including:

- The siege of Derry
- Industrial heritage
- Land ownership
- Natural Heritage
- Early History
- Living Landscapes/the Rath
- Talking History

Creggan Country Park can also arrange Walking Tours of its site exploring all these subject matters in detail as well as offering field trips to other sites associated with these topics. Tours can also be tailored to suit groups focusing on specific academic fields. For example the Industrial Heritage module can be expanded to suit groups studying science/geography whilst the siege module can be tailored for modern history groups.

Other sites associated with water supply in Derry:

Banagher Reservoir

Banagher Forest, one of the premier forest parks in the north of Ireland contains both pedestrian and traffic access to the Banagher Glen reservoir complex which currently acts as the main water supplier to the Derry City catchment area.



Creggan Country Park can organise specialised guided tours to Banagher for all types of groups exploring the natural and industrial heritage aspects of the site. These would be especially useful for school groups studying science and geography although the tours can be tailored to suit all ages and groups regardless of their academic focus. Creggan Country Park can also organise other field trips and activity programmes (both on and off site) concentrating on the history of water supply in Derry and associated topics.

Industrial Heritage Walking Tour: In the past Derry had a wealth of industries including whiskey making, tobacco factories, ropeworks and of course shirtmaking. This walking tour explores all of these industries and would be of particular interest to students of modern history and economics. The tour is delivered by derrybluebadgeguide (www.derrybluebadgeguide.com) which specialises in walking and coach tours of Derry and beyond.

For details on organising these tours contact the Creggan Country Park on (028) 71363133 or info@creggancountrypark.com



Creggan Country Park

Industrial heritage and water supply

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