

## **MINING – THE BRIDFORD BARYTES MINE**

Although some commercial mining had been undertaken at Doddiscombseleigh and Hennock since the early 1800's little exploration had been undertaken in Bridford. However in 1834 it was reported by Carrington that there were attempts to discover manganese and lead, the former on South Birch to the west of Neadon Lane and the latter on both sides of Pound Lane in areas now known as Venn Farm, Stone and Southwood. Various sinks and depressions in the fields are perhaps evidence of trial digs but it was not until 1849 that commercial operations were established by the Wheal Ann Copper, Tin & Silver-Lead mining company at Stone and in 1853 at Birch Aller beneath a prominent ridge west of Venn. Both these sites can be seen today, Wheal Ann's eventual legacy being the poisoned settling lagoons below Stone Lane and Birch Aller bequeathing its granite engine house and stack alongside the footpath from Neadon Lane to Pound Lane through Many Waters.

### **Wheal Ann – the first lead mine**

The first search for northernmost end of the Teign Valley's 'great lead lode' was started in 1847 in open cast workings but with little initial success. In 1849 the company changed its name to Bridford Wheal Augusta and then again to Bridford Consols in 1850, apparently now controlled by the owners of Wheal Adams mine towards Christow. Only small quantities of lead were produced even though by 1855 shafts had been driven to a depth of over 200ft, drained by a 40" Loam designed steam engine installed in 1853 as reported in the 28<sup>th</sup> July edition of the Exeter Flying Post –

## **MINING ENTERPRISE IN DEVON – BRIDFORD CONSOLS MINE**

“ It was just twelve months ago that we recorded the setting to work of a steam engine which had been erected at the Christow Mine, in the parish of Christow, in this County, and in connection therewith drew attention to the efforts which were being made by men 'of enterprise' and capital, to develop the mineral resources of this important district, and to the prospect which appeared to be held out to them of success. Last week a similar event took place at the Mine called Bridford Consols, in the neighbouring parish of Bridford, and we had again the opportunity of being present. The weather was less favourable than might have been desired, but the attendance of persons interested in the mine, and of professional gentlemen, 'tradesmen', and agriculturalists from Exeter and the neighbourhood was both numerous and respectable. The engine which has been constructed by the celebrated engineers, Messrs Hockin and Loam of Cornwall, and combines every known improvement, was set to work, amid the cheers of the assembled company, and appeared to answer admirably. A dinner afterwards took place at Sandford's 'Teign House Inn' at which about five and twenty gentlemen sat down. Mr May, one of the pursers of the mine, presided and - his colleague, Mr Bidwill, being prevented from being present by a recent and severe family affliction – the vice-chair was occupied by the Rev.J.H.Southcomb of Dunsford. Among the gentlemen present were the Rev.TW. Whitter, Messrs T.Floud, H.Ford,K.J.Pye,Smerdon,Perrott,Hughes,Willcocks,Loam,Wescomb &c &c.

After dinner the usual toasts were given, responded to– Prosperity to Bridford Consols Mine, being very cordially responded to - and a good deal of interesting information was given. It was stated, among other things, that the expenditure upon the four mines under Messrs May and Bidwill's management (Exmouth, Adams, Christow and Bridford) amounted to not less than £10,000 a year; that the greater part of the money came back, directly or indirectly, to the City of Exeter inasmuch it was spent in stores which were supplied by Exeter merchants, or in wages which were either laid out with Exeter tradesmen or with the shopkeepers or agriculturalists of the district who themselves came to Exeter for supplies; and that this

expenditure was covered by the production of Wheal Exmouth alone. It was further stated that the adventurers in the latter mine, - who have already had tangible proof, in the shape of a dividend of the soundness of their undertaking – had dressed 125 tons of ore within the last two months, which was ready to be brought into the market but which the Committee had thought it prudent to withhold in the belief that the present depression in the price of lead was exceptional and temporary, and that it would be found advantageous to wait.

Mr Loam, in returning thanks, on his health being proposed, referred to his extensive connection with the mining interests, and the opportunities that he had had for observation, and expressed a very strong opinion – which he said was born out by every miner with whom he had spoken on the subject – that the load that runs through Wheal Exmouth was unsurpassed by any in the West of England, and that the adventurers in Bridford Consols had also good reason to anticipate highly satisfactory results. In this he was supported by the captain of the mine, who expressed himself very confidently as to its prospects and anticipated the time when Bridford Consols would become the “Queen of the West”.

Mr May and Mr Wescomb explained that a peculiar feature of the Bridford mine was the presence of a mass of barites, estimated at not less than 100,000 tons, and which was regarded as a most important indication of its value as a lead mine, because it was stated by miners (and the mining captains present assented to the observation) that they never found barites without finding lead. But the barites itself was described as an article of commerce, for which there was a considerable demand, it being used as a substitute for white lead, and for other purposes. The formation of a Company in London, with a capital of £85,000 to work the barites mines of Belgium, was mentioned as proof that the article was much sought after, and it was stated that the most minute and careful investigation had been made, and that the result of that investigation was that the barites at Bridford could be brought into the market upon terms that would yield to the adventurers a very considerable profit. These statements were received, as may be supposed, with considerable applause.

The formation of a railway or tram-road from Dunsford bridge to Newton (Abbot), to facilitate the transit of the ores, from the mines to the place of shipment, was spoken of as highly probable, and the names of influential gentlemen were mentioned, who had recently been upon the spot with a view to the promotion of this object. Other topics were dealt upon in the course of the evening, and particularly the advantages that the City of Exeter, and the district generally must derive from the expenditure of capital and the employment of labour on so considerable a scale. The clergymen present bore testimony to the general good conduct of the miners who had been brought into the district, and it was stated that Mr Whitter had established a lending library for their benefit.

The dinner and the wines were excellent, and a very pleasant evening was spent.”

### **Victorian Optimism**

The significance of this report appears to lie more in its spirit of optimism rather than the details of its facts, and unfortunately the passing references to the several pointers to a prosperous future were to have more substance than the prospects for the immediate present. However, even today mining is not an exact science and perhaps those present had good reason to be confident. The Wheal Exmouth mine at Canonteign was already successful with genuine prospects and had recently amalgamated with the adjacent Wheal Adams mine. It would be most surprising if the Chairman of the dinner, Mr May, and his absent colleague Mr Bidwill, were not the same Messrs May and Bidwell who were also at that time Purser and Secretary at Exmouth. Encouraged by speculative optimism, its investors had re-opened old workings well to the North at Newton St Cyres, driving two shafts named May and

Bidwell. Perhaps the interest in the Bridford mine was another attempt by the new consortium to leapfrog and squeeze out smaller workings south of Christow, or perhaps a private speculation by two 'insiders' exploiting local knowledge. Also noted as present was a Mr K J Pye ; possibly (but with far less certainty) the same as, or related to George Pye the Hennock mine purser after whom the second shaft at the Birch Aller mine was named.

Nevertheless, with the new engine in place at Bridford, and relying more on hopeful intuition rather than geological certainty, the main shaft, later to be known as Old Engine Shaft , was driven to below 200'. Of barites there was an abundance, but within a couple of years it was apparent that there were no workable lead deposits, and operations ceased around 1854. The dinner at The Teign House remains the best-documented event in the lead mine's brief history and it would be another 20 years before the 'considerable demand' for barites and the 'railway or tram-road' became a reality.

### **The Teign Valley Railway**

In 1863 the Act incorporating the Teign Valley Railway Company received Royal Assent but it was not until 1882 that it reached Ashton and a further year before a siding was extended to the Teign House. In 1875 the Teign Valley Mining Co, later of 15 Bedford Circus, Exeter re-opened the old Bridford Consols workings and began a successful barites mine that would operate until 1958 producing over 400,000 tons, most of it being carried by rail from the Teign House sidings. The original shaft remained until 1930 when, after years of disuse it was finally filled in following the collapse of the collar during attempts to re-open it to develop deep barites exploration.

### **The First Barytes 1875 ~ 1900**

The first few years following the 1875 re-opening are recorded in some bare statistics of production and employment in a paper on Devon and Somerset mines 1845 – 1913 by Burt and Waite, reproduced opposite. As mentioned later, early barites production came from surface working the original No.1 vein although this was ultimately worked down to about 90 ft. The early operations, however, must have been largely dependant on the economics of an evolving demand for a hitherto little used mineral. References at the 1853 dinner to major investment in Belgium indicate a growing awareness of the material which was increasingly used in paint pigments and paper manufacture. If correct, the reported sales prices in 1877/78 of around £4 per ton for surface-worked output represent very different operational opportunities from those of 50p per ton which appears to be the going rate from 1880 onwards.

As with all the Valley's mining enterprises, location and transport costs were a determining factor. As referred to later, John Oak Harris of Exeter was Secretary of the new Company and Edward Ellis, an Exeter-based surveyor was much involved. Both were prime movers in extending the rail link from Teign House (Christow) through to Exeter and Harris was also Secretary of the Provisional Committee of the Exeter, Teign Valley & Chagford Railway in 1882/83. There was a mill at the mine, but final processing to get the barytes to the purest possible colour (which governed the price) was carried on at a mill in Commercial Road ,Exeter, near Exeter Quay, to which the entire output had to be carted, originally by road at a cost of 40p/50p per ton. This cost cut the company out of many markets and Ellis estimated that sales could be increased five-fold if a direct rail link could be provided to Exeter. After the Teign Valley Railway opened in 1882, it was used instead of road transport despite the fact that the rail journey from Teign House to Exeter (via Newton Abbot) was 32 miles. The rail rate was 12 ½ p per ton in addition to the transport down the road from the mine to the

rail-head at Teign House. Also there were rail siding costs and road transport from St Davids station to the Quay. It was not until 1903 that the direct route via Longdown to Alphington Road station was opened, reducing the journey to 8 miles, but even then the freight cost only reduced to 9p per ton on the grounds that they had been enjoying a favourable rate in previous years. Certainly transport costs restricted the company's expansion, but in view of the fact that the ore reserves eventually proved limited, it could be argued that this simply extended the mine's useful life.

It would seem therefore that the 1876 re-opening may have been an opportunist response to cash-in on rising prices, stimulated by a rising demand which could be met from easily worked surface production. However there were many alternative sources for barites beyond the Teign Valley and increased demand from industry must have encouraged competition and forced down prices. The table shows a clear pattern of rising employment and underground working, implying higher costs chasing falling sales revenues. Although annual output had risen to 2600 tons by 1891, there were 16 employees, 5 of whom were underground, and with annual sales of £1,560 (less than £100 per employee) it would seem doubtful if the enterprise was profitable. It is not surprising therefore to see that operations were cut back, so that by 1896 output was down to 750 tons. But with only 3 surface workers costs must have been minimal and probably returning a modest profit.

But, at least the mine was working, unlike some of the more prosperous lead mines down the valley which were now exhausted. Finally the barites that had frustrated the search for lead in the northern lode was to have its day and it is not surprising to note names, formally concerned with the lead mines, following their fortunes to the Bridford Cinderella. After many years from 1867 as Purser at Wheal Exmouth and South Exmouth, then Frank Mills, the Valley's largest mine mine, John Oke Harris was reported for the years 1876-79 as manager of the Aller Silver-Lead mine, probably a trial on some earlier workings south of Christow. No output is recorded however and during this period he also appears as Secretary of the Barytes mine as well as continuing to feature in the final closure of Frank Mills. The mine's death throes were obviously becoming somewhat fraught as on 4<sup>th</sup> May 1878 an Exeter solicitor, Mr Gidley, noted that Harris had come to him in great anxiety and said there were not enough funds in hand to pay the costs, and requesting a loan of £50. This advance would be one of many totalling £350 and in 1881 Harris was pursued to the Court of the Stannaries for the repayment of Gidley's loans and on a variety of related charges involving borrowing money for the company whilst being in arrears on his own personal calls. He was not the only shareholder to stage a timely exit before the final collapse, and reinforces the impression that the local investors contrived (or connived !) to enjoy the prosperity of start-up and success whilst avoiding the costs and losses of closure.

**Either way, by 1875 lead and silver were worked out and barites was the future.**

The history of the Barytes mine has been comprehensively researched and published in a definitive paper by C J Schmitz to which there is little to add. With total acknowledgement to the author and with minor editing and additions it is reproduced hereunder –

## **The development and decline of the Devon Barytes industry,**

1875~1958

By **Christopher J. Schmitz, B.A.**

Between the 1830's and the 1870's the parish of Bridford in the Teign Valley witnessed a number of attempts to commercially exploit a series of local lead and barytes bearing mineral veins. These attempts were largely unsuccessful. Prior to 1875 mining operations seemed to have been characterised on the whole by an ignorance of the nature of the mineral deposits and encouraged by the success of mining in nearby Hennock and Christow by a belief that workable deposits of lead could be located. This assumption had been shaken by the late 1860's when it came to be accepted that barytes was the only local mineral of any abundance. Not until the late 1870's, however, were market conditions favourable to the production of this mineral. By then the British chemical industry was expanding its demand for the product in traditional uses, such as filler in papers, and was finding new uses for it as a component in a range of paint pigments. In this buoyant market situation production of barytes in the United Kingdom increased from an average of under 9,000 tons a year in the period 1868-73 to 25,000 tons a year in the 1890's and 37,000 tons a year in the period 1900-14. The Devon industry shared in this boom. Mining operations such as Bridford expanded steadily and although subject to fluctuating fortunes continued until the summer of 1958. During this period the mineral was extracted from increasing depths, utilising progressively more advanced mining and milling technology. By the time of closure the deepest levels were 600 feet from the surface and the annual output about 10,000 tons of ground barytes. The aim of this short study is to indicate how an industry located in a predominately agricultural community, with generally adequate knowledge of the nature of its mineral deposits, adapted to severely fluctuating external economic conditions, in particular through two world wars and the slump of the 1920's and 1930's.

The history of Bridford barytes production can for convenience be divided into two periods. The first extends from the recommencement of operations in 1875 until 1927 when a controlling interest in the mine was obtained by the Malehurst Barytes Company Limited. Although there were a few attempts at underground mining of the ore-bodies in this period most of the barytes was produced from open cast workings. The list of Devon mines recorded as working in 1896 reports three surface workers but no underground miners. The second period covers the years from 1927 until the abandonment of the mine in 1958, during which time a great deal of underground development took place and the vast majority of barytes produced came from underground workings. The contrast between the two periods becomes clearer with an examination of the average annual tonnage produced in each. It is estimated that from 1875 to 1927 approximately 75,000 tons was sold. In comparison between 1928 and 1958 approximately 348,000 tons was produced. Expressed in terms of annual average output this contrast becomes more marked;

### **Estimated Average Annual Production of Barytes from Bridford Mine, 1875-1958.**

1875-1927 (inclusive)	1,440 tons
1928-1958 (inclusive)	10,875 tons

The increased scale of output after 1928 was brought about by a combination of the more effective location of paying ore-bodies by the Malehurst Barytes Company, and their introduction of more efficient mining, milling and marketing techniques.

Another significant difference between the two periods is in the amount of evidence surviving. For the earlier of the two this is very fragmentary and often confusing. With the mining journal no longer reporting on progress at the Bridford mine there is less known of the period 1875-1927 than of the earlier working of 1849-54. However, a certain proportion of the story can be pieced together from reports in local trade directories, the mineral statistics of the Geological survey and, most valuable of all, from odd evidential fragments gleaned by Lt. -Col. Josslyn Vere Ramsden when he became mine manager in 1927. He interviewed old company employees in order to assess the work that had been undertaken at the site by the previous owners. Colonel Ramsden's notes from this period provide a tantalising incomplete picture in the half century up to 1927 but it is almost certain to be the only picture we will ever have.

Mining at Bridford recommenced during the year 1875. The new owners, the Teign Valley Barytes Company, seem to have achieved fairly satisfactory results within a short space of time. In 1876 they sold 682 tons for the mineral for £558. 7s. 9d. Production fluctuated thereafter, but remained about this level until 1887 when regular output was increased to about 1,000 tons a year. Total yield in the period 1882-1906 was 21,250 tons. Following an earlier request to Wm.SurrIDGE the owner of Bridford Mill to allow the miller to grind barites to a pure white powder there was an unsuccessful offer in 1880 to purchase the mill below the mine.

Although in the previous working Old Engine Shaft had already been sunk to a depth of 35 fathoms below adit and there have been workings at that level and at the 20 fathom level below adit, most of the production between 1876 and 1906 came from open workings. The principal one was that visible today, sandwiched between the two roads to the east of Bridford village, about 75 yards north of the collar of the new shaft . In this quarry the surface outcrop of No. 1 vein was exploited, ultimately to a depth of about 90 feet from the original surface at the northern edge of the excavation. In a smaller quarry about 50 yards to the west, a branch vein, the No. 4 was exposed and worked.

Throughout the life of the mine these two mineral veins Nos 1 and 4 were respectively the first and second most important, being worked first of all at surface and subsequently in underground levels down to that at 600 feet. In the early days when the open casts were still quite shallow the broken vein-stone was hoisted out and carted across the road to the mill which was situated between Old Engine shaft and the stream. Later an adit level was driven beneath the main quarry and the ore dropped through a chute in the bottom of the excavation and then trammed out to the washing and crushing plant. At the same time, to solve problems with excess water in the gradually deepening pit a sump or drainage shaft some 16 feet deep

was sunk at the northern end of the adit, adjoining the boundary. It is not possible to date accurately the construction of the adit and sump but they seem to have been completed by the early 1890's.

In 1883 the manager of the Teign valley mine, Bridford, was Samuel Rundle according to Kelly's Devonshire Directory.(in fact the nominated manager was a Matthew J.Dunsford who in practice left day-to-day running in the hands of Rundle). Rundle held this post until 1893 when his son Joseph succeeded him. The 1891 census records Joseph Rundle as living at Venn Mine Cottage, aged 38 and described as Barytes Miner (foreman) originally from Cornwall. A grave in Bridford churchyard records 'Celia, wife of J N Rundle of Teign Valley Mine, d. 20.6.1905 age 53 years'. For the succeeding 35 years Joseph Rundle was foreman or surface manager at Bridford and came to retirement in 1927 after a total of 45 years with the company. Col. Ramsden subsequently based much of his reconstruction of the mine's history on information supplied by Rundle although, as the new manager wryly noted, 'Rundle's statements were generally unreliable'.

Despite obtaining most of its barytes from the No. 1 vein open working during the 1870's and 1880's the Teign Valley Company must have hoped to win ore from other veins, including the No. 4, running parallel to the main ore-body. To this end in about 1887 Samuel Rundle was given the task of pumping out old engine shaft which had been disused for 20 years. Once the shaft was dry and had been cleaned out and re-timbered it was decided to sink it further. Within the space of a year or two, according to Rundle Junior, they had gone down another 150 feet. Then at a depth of 420 feet from surface a short level was driven along No. 4 vein which proved to be 'whiter but narrower' than nearer surface. This statement is supported by Henry Dewey nothing at a depth of 70 fathoms the barytes at Bridford exhibited such tendencies.

Another point of interest in Rundle's account was the fact that in clearing this shaft the 1851 drainage adit was located at a depth of 10 fathoms. This had collapsed but could still be seen to run off in an easterly direction under the mill buildings to the probable site of its mouth just to the west of the settling ponds, an area known as 'the marsh'.

For some reason the company did not decide to exploit the no. 4 vein from old engine shaft at this time. In all probability they were content with working the easily-won ore from the quarry. Accordingly the shaft soon fell into disuse once again, and when Col. Ramsden arrived at Bridford in 1927 it had long been flooded. The nearby engine house and chimney, associated with the Hocking and Loam 40-inch pumping engine erected in July 1853 had been demolished in about 1884 as an exercise by military engineers. By the 1920s few signs would have remained of this episode of the early history of the mine.

In the years just before the first world war output was running at about 1,000 tons a year. Under war time conditions, however, production was stepped up and had risen to 3,000 tons a year by the early 1920s despite the problems encountered in wartime, shortages of labour

and materials being the most damaging, the high level of demand for barytes ensured the continued prosperity of Bridford mine. The demand for barytes was all the more pressing because before 1914 Britain had imported most of its supplies of this important raw material from Germany. In the period 1908 -- 1913 average annual imports of barytes into Britain from all sources were running at about 47,000 tons. Home production in the same period was about 43,000 tons a year and thus was less than half of total consumption. With the loss of German supplies imports fell to 32,000 tons in 1914, and then more savagely to 7,000 tons in 1915, 9,000 tons in 1916, and 2,000 tons in each of the years 1917 and 1918. Not until 1919 did imports recover, reaching 20,000 tons, to be followed by 29,000 tons in 1920. Home production did little at first to compensate for this shortfall, and so it became more important to secure supplies of the mineral and government assistance was given in procuring essential supplies and labour.

#### United Kingdom Barium Minerals Production 1913-18

1913 50,000 tons	1916 76,000 tons
1914 49,000 tons	1917 65,000 tons
1915 62,000 tons	1918 66,000 tons

With government help the Teign Valley Company managed to overcome the acute problems it had experienced in the early years of the war, with men leaving for the forces and with shortages in supplies of timber, rope, explosives and other materials. The trebling of output achieved during the period 1914-20 resulted largely from a more intensive working of No. 1 vein in the quarry, together with a little mining at adit level.

A fairly full description of mining operations at Bridford survives from the war period. In 1915 the Geological survey published a resources memoir on Barytes and witherite, written by G. V. Wilson and H. G. Dines. In the section on Devon they note that the Teign Valley Mine being operated by the Devonshire Baryta Company of Exeter, was extracting the mineral from a quarry about 100 feet deep, cutting a vein about 30 feet in width. The barytes occurred mainly in botryoidal or kidney-shaped form with bands of different colours: white, cream and pale brown. This streaky appearance gave rise amongst the miners to the name of 'bacon-ore'. It was apparently, a particularly good form of barytes compared with that in other parts of Britain, being clean and with few impurities. After the ore had been extracted from the adit it was trammed to the dressing plant where it was crushed to a fine gravel in a 'Chilean Mill' driven by waterwheel. Next, fragments of waste rock remaining were picked out by hand and the final product, as dispatched from the mine, assayed on average 96 % BaSO<sub>4</sub>. Further processing was undertaken at the company's mills at Exeter, in use since the 1890s, where the ore was spread over plates heated by steam, and passed through another stage of hand sorting. The aim of these operations was to try and ensure the colour was as pure as possible, Wilson and Dines noting that the market price for the mineral depended not so much on chemical purity as on colour and the grades produced were arranged on that basis. After washing and drying at the Exeter Mill the barytes was finally milled to a fine greyish-white powder, the bulk of this product then being dispatched to Bristol.

After 1914, wartime conditions and the need to expand output put a strain on the company's financial resources and so in 1917 the organisation was re-constituted, the name changed to the Devonshire Baryta Company Limited, and 3,000 new £1 shares issued. At the same time the grinding plant on the quay at Exeter was leased from the city Corporation for a further period of ten years. As part of an attempt to further purify the barytes before shipment to Bristol, experiments were carried out in 1920 by Dr Martin Lowry, F.R.S., in order to produce a purer colour in the finished product. The outcome was a recommendation to submit the mineral to prolonged bleaching with Sulphuric acid. However, as Ramsden comments, bleaching of the ores before grinding was never seriously tried since Lowry's results were poor on the whole.

Notwithstanding the financial restructuring of the company in 1917 there appear to have been continuing marketing difficulties coupled with a shortage of investment capital throughout the 1920s. This is not surprising considering the generally depressed state of British trade and industry and of British financial institutions, due in large measure to the collapse which followed the brief post-war boom of 1919-20. Output of many raw products, like that of barytes, had expanded during the period 1915-20 in response to wartime demand. This boom was effectively over by March 1920 with industrialists caught between immense stock-piles of raw materials and a falling market for products. Prices for these raw materials plummeted and it was in this situation that the Devonshire Baryta Company found itself committed to expanding production as well as being able to sell less and less of its output. Barytes had to be sold at whatever price could be obtained and sales became irregular and unpredictable. In this uncertain climate the Devon Company struggled on optimistically for a number of years, with a minimum of exploration work for new ore reserves.

### **Malehurst Barytes**

With no significant improvement in the market by late 1926 the Bridford shareholders began to think in terms of amalgamating with one of the larger barytes producing companies operating elsewhere in Britain. This reflected a trend common in industry at this time, and particularly in the mining sector, where trade depression and the resultant contraction of markets led to increasing rationalisation and combination of enterprises. Small firms had a clear choice: join with larger groups or go out of business. At Bridford, the result of the shareholders' decision was that in February 1927 the property was offered to the Malehurst Barytes Company Limited.

Malehurst was already deeply involved in barytes mining and processing in the Shropshire area where, via a subsidiary Shropshire Mines Limited, it controlled 12 of the 18 mines at work in 1922. In reply to this offer Malehurst arranged for a team of mining consultants, Messrs Shepherd and Macleod of Bewick, Moreing and Company, to examine the mine and report on its potential. This report, a precis of which is still available for inspection, indicates the rather primitive state of the Bridford operation in the days before the Malehurst take-over. The power available at the site was stated to have been supplied by a 10 horsepower

waterwheel. As far as transport was concerned, 'A new light railway of standard gauge passes close to the mouth of the adit and the ore could be shipped to the station at Christow for 6 pence per ton'. From there onwards the freights were calculated as follows: 'Rail, Christow to Alphington 3/3d per ton; cart, Alphington to Mill/Quay 1/6d per ton; by sea to London docks ex quay 8/- per ton plus 3/9d dock charges and 4/1d railway charges'. The total cost of shipping each ton of barytes from the mine to the anticipated market in London was thus computed at 21/1d. The report continued with a consideration of the milling and washing facilities owned by the old company. There was ample water available for washing on the site, labour was plentiful in the district and thus cheap, and the estimated capacity of the existing mill without further capital expenditure was put at 30 to 60 tons a week. The grinding mills in Exeter, leased from the corporation, then came in for some criticism. It was stated that the mill, situated on the quay, was powered by an old waterwheel with four pairs of crushing stones and two Torrence mills. Standby power was in theory provided by a 20 horsepower oil engine. Shepherd and Macleod concluded that the building was 'obviously cramped and useless' and advised abandoning it. Despite all these drawbacks, however, the report came out in favour of the acquisition of the mine by Malehurst largely due to the fairly substantial ore reserves estimated to exist on the site. These were computed at around 77,000 tons on a length of 447 feet on the strike of the veins, and to a depth of 66 feet from the surface. (*presumably this means the ore body was first struck at 66 ft and then carried on to about 500 ft – barytes deposits being found in vertical not horizontal deposits*)

### **Malehurst and Laporte Chemicals**

Shepherd and Macleod's report was presented in March 1927 and in September of the same year the entire share capital of the Devonshire Baryta Company was purchased by Malehurst for £4,500. Notwithstanding the change in ownership, operation continued under the original name, the Devonshire Baryta Company until 1950. During the course of the 1930's the Malehurst Company became increasingly integrated with the larger firm of Messrs Bernard Laporte and Company of Luton, paint and chemical manufacturers. By 1950 Malehurst had become a subsidiary of the Laporte group and from then onwards the mine at Bridford was operated in the name of the latter organisation.

Even under the old name, work at Bridford changed radically in the first few years after 1927. The surface plant was modernised, underground exploration and exploitation intensified; overall production increased and management and marketing improved. By the outbreak of the Second World War the mine had been transformed from an antiquated open-cast working into a modern efficient underground operation with a high production capacity. At the root of this change lay the better financial facilities available and the dedicated and efficient management of Col. Ramsden. He had been actively engaged in the management of various barytes mines since the end of the First World War and was acknowledged by the geologist H. G. Dines as an extremely competent mining engineer. His detailed, though rather random and disorderly notes on Devon's mining industry and mineral deposits bear witness to his enduring interest in the subject, both in business and academic sense.

The changes at Bridford wrought by the new management commenced immediately. In September 1927 Mr Tonkin, underground manager of Malehurst's Huglith mine in Shropshire, was sent down to take over the post of foreman from Rundle. At the same time Col. Ramsden moved from Shropshire to take up the post of general manager. These two men then set about reorganising the mine at surface and underground. First of all the questions of leases and mineral rights was attended to. In September 1927 the nearby Leah's Court Cottages were purchased together with the associated mineral rights. Leases for adjacent mineral rights were then negotiated. Shipping Farm Minerals, covering the ground to the north, was purchased by the Bulstrode Trust Limited in 1929 and then leased to the Devonshire Baryta Company the same year on the basis of a royalty of 2/-d. per ton of ore raised. The formal lease was signed in February 1931. In 1929 the Bulstrode Trust also purchased the old railway track, mentioned in the Shepherd and Macleod report, which ran from Bridford-mills, by the River Teign, up past the mine to the disused Scatter Rock Quarry to south-west. (*this must in fact mean Paddy Dixon's Quarry, not the main Scatter Rock which remained until 1950*). The quarry had closed in 1907 and the track way had been disused since then. The track was leased from the Bulstrode Trust in 1930 and in October of that year converted into a roadway with branches leading to the washing plant and other buildings and offices. Together with other minor leases negotiated in the period 1927-34 these agreements obtained by the new management enabled the company to significantly expand its scale of operations over the space of the next two decades. There was by the mid-1930s more scope for mineral exploration and the extension of underground workings into ore deposits thus discovered.

The amount of exploration undertaken increased year by year in the early years of Malehurst ownership and significantly the majority of this consisted of underground footage. The initial stimulus to underground exploration came in March 1928 when a heavy fall of ground in the main quarry prevented much further work there. It had in any case begun to reach the practical and economic limits of open-cast working methods at the current depth of 90 feet. Under Ramsden's direction the sinking of winzes below adit level was commenced preparatory to further underground exploration. During 1929 it was decided to sink a new shaft on the outcrop of No. 1 vein in order to work this and other parallel ore-bodies at depth. This commenced by the end of that year and by March 1930, under the name New Shaft, was down to a depth of 80 feet. At this level a drive was put out towards No. 1 vein and then along its strike for a total distance of 700 feet from the shaft. By 1937 New Shaft was down 280 feet with levels at 80, 130, 180 and 280 feet. Driving at these levels during the course of the 1930s opened up a number of barytes veins and the total ore reserves of the mine were accordingly greatly enhanced.

Annual driving development of footage underground from 1928 – 1943 was

1928	225	1936	2978
1929	732	1937	2870
1930	1290	1938	3636
1931	1285	1939	2263
1932	1260	1940	2801
1933	1788	1941	1931
1934	1809	1942	1179
1935	2347	1943	1970

In these 16 years total underground driving amounted to 30,664 feet, or just under six miles in which hand powered tub lines were used. This clearly illustrates the increased rate of exploration after 1928, rising to a peak in 1938 and falling again in the war years, with the mine once again suffering labour and material shortages similar to those experienced during the First World War.

In May 1930, in the process of exploring the ore-bodies at depth, it was proposed to reopen Old Engine Shaft, last used in the 1890's. This work had to be abandoned within a short space of time, however, as the collar suddenly slumped inwards during pumping and clearing operations. Col. Ramsden then decided to concentrate activity in the New Shaft and ordered the miners to fill the bell-mouthed hole resulting from the collapse of the shaft collar with mine waste and ashes. Thus disappeared the last surface indication of one of the oldest parts of Bridford Mine.

To complement the anticipated increase in ore production attempts were also made to improve the milling and washing plant at surface during the early 1930s. The lease on the Exeter quay grinding mill had expired in 1927 and in accordance with the recommendations of the Shepherd and Macleod report it was not renewed. Instead, a new grinding plant was established at the mine, just to the north of the newly constructed roadway. In conjunction with this development other stages in the concentration process were modernised and the handling capacity of the entire dressing plant increased in line with the expected expansion in output. All of these improvements were completed by 1939.

These developments would have been of little value but for a parallel reorganisation of the marketing arrangements for the final product. Although there had been a slight economic recovery in Britain by 1927-29 this was followed by a trade depression lasting from the end of 1929 until about 1934. This slump, which affected all sectors of the economy, was if anything more severe than that of the early 1920s. Unemployment was rising and demand for industrial raw materials once again stagnated. Recovery from this depression came slowly and by 1935-39 the worst seemed to be over. The cycle of economic activity asserted itself once again, however, and by 1938 the economy was in recession. This particular downturn was only halted by the outbreak of war in 1939 and the rapid growth of rearmament. The economic situation thus facing the newly modernised Bridford Mine was essentially one of

instability, with frequent sudden drops in the demand for their product. Only the carefully planned and controlled marketing of the mineral prevented the company from financial ruin. Among the changes effected in the selling of the barytes was a closer co-ordination between the level of output and the previously arranged demand - coming mainly from consumers within the Malehurst- Laporte group of companies. One such arrangement was a contract for the supply by rail from Christow of 160 tons a week to Laporte's chemical-paint works at Luton throughout 1929. This contract, originally planned for one year, was then extended for a further five years from the start of 1930. Also in 1929 a contract for a total of 2,000 tons over two years had been drawn up with the Silicate Paint Company of Charlton, Kent. By means of this kind of contract the company weathered the worst of the 1929-34 slump and with partial recovery in the market after 1935 arrangements of this kind were not so cyclical.

During the late 1920s and the 1930s the results of this modernisation and exploration programme were manifested in increasing output. This grew dramatically after the Malehurst take-over in 1927 and continued to expand, with minor fluctuations, until a peak was reached under conditions of wartime demand in 1941. Thereafter production declined on trend although remaining at substantially higher levels than during the early 1920s. In this period, 1928-50, the most successful in the history of the mine, more than a third of a million tons of barytes was sold, with a total value of approximately £2,000,000.

Bridford mine annual barytes production 1928-1950 (long tons)

1928	1123	1940	23159
1929	4921	1941	26800
1930	9680	1942	18200
1931	12458	1943	16200
1932	13175	1944	12828
1933	15074	1945	12500
1934	16914	1946	12373
1935	16368	1947	11242
1936	18822	1948	10428
1937	17807	1949	11482
1938	22268	1950	5673
1939	21310		- 6 mths.

Reference to the footage development above illustrates a close correlation between the pattern of production and that of development driving through this period. With new shaft down to the 280-foot level by 1937, five distinct veins (Nos 1 - 5) were being driven on, although only Nos 1 and 4 yielded any great quantities of ore. By 1940, Col. Ramsden was in a position to report with satisfaction on the work being carried out at the mine: 'We have the following definite parallel veins in our mine; running from west to east, No. 5 then a gap of 50 feet, No. 4 and a gap of 100 feet, followed by No. 1, and after another gap of 60 feet at its maximum extent, Nos 2 and 3 veins. Nos 4 and 5 veins differ little from No. 1 vein in mineral

character, except they contain rather more pyrites and galena, being nearer the granite massif. We believe there is a No. 6 vein some 200 feet west of No. 5 vein, which we hope to open this year. We have driven up some 150 feet towards it. We hope this next week to cut across No. 7 vein some 200 feet east of No. 3. Probably this is really the main vein of the area. Our belief is based on float and old reports, but we are getting very near to where it should lie'. At the same time that a clearer picture was being obtained of the veins that existed in the mine, New Shaft continued on its course of sinking. By 6 August 1938 it had reached a depth of 380 feet from the surface.

A short but interesting account of the method of extracting the ore underground was given by Ramsden in his notes for 1938. This method, he said, was generally known as 'Rill and Fill'. He continued: 'A main haulage drive is driven along the vein,, measuring 7 feet high by 5 feet wide. Above these main drives stope drives are driven, with boxholes at 25 feet intervals, down to the main drive. The pillar between the main drive and the stope drive above is generally 6 feet thick. The stope drive is then stripped out to the full width of the vein, and the ore is stoped out to a height of about 16 feet. Then, when stoping along a length is complete, the broken ore is removed entirely, through the boxholes. These boxholes are then built up for 12 feet with wooden cribbing and waste rock filling them is run in from above until it is 12 feet thick. From this new floor, stoping is again started, and the ore extracted by successive stages of stoping and filling'.

At surface various improvements were continually being made to the dressing plant. The Second World War, like its predecessor of 1914-18, had placed a severe strain on the mine, with labour and materials shortages, at the same time as a desperate demand for its products to promote the war effort. Bridford weathered this dark night largely through careful management and with such help as the government could give from time to time. After 1945 conditions started to return to normal and the mine once again looked forward to a period of steady growth and consolidation, according to Ramsden's notes. By 1950 the mine's output of ground barytes stood at about 10,000 tons a year, with the deepest workings being at the 380-foot level. A total of 62 people were employed; 25 of those working above and 37 below ground level, with electricity in use both above and below the surface.

A number of considerable changes in the management and working of the mine occurred during 1950. Most far-reaching, the Malehurst Barytes Company, along with Bridford Mine, became a total subsidiary of the Laporte group in October of that year. This change of ownership became immediately apparent, as had the previous change in 1927, in an intensification of the exploration programme.

## The search for new deposits

The company had extended its underground mining rights well beyond the limits of the established workings and still lie dormant in the title to several surrounding properties. The following extract from a conveyance of property to the West of Pound Lane shows the reservation of mining rights to Laporte which are still valid.

The Freehold land shown and edged with red on the plan of the above Title filed at the Registry registered on 8 August 1984 being land on the south of the road from Brldford to Bridfordmills Bridford.

NOTE 1:- Conveyance of the land in this title and other land dated 31 December 1956 made between (1) Eva Maud Partridge and Lily Partridge (Vendors) and (2) Anthony Richard Monteith Hodson and Priscilla Mary Hodson (Purchasers) contains the following exceptions and reservations:—

EXCEPT AND RESERVED in fee simple out of abstracting presents to the Vendors and their successors in title ALL mines minerals and mineral substances in upon or under the land thereby conveyed TOGETHER with full power for the Vendors and their successors in title owners and lessees for the time being of such mines minerals and mineral substances : —

- (a) to work and get the same either by entry on the surface or by underground workings
- (b) without any obligation to leave any subjacent or lateral support for the surface or any buildings for the time being erected thereon or for any adjoining minerals
- (c) for the purpose of such workings from time to time at any time with or without horses carts waggons machinery and other implements materials and things to enter upon and use the surface and sink pits and to do all other acts and things necessary or proper for working or getting such mines minerals and mineral substances

PROVIDED that proper compensation should be paid to the Purchasers or other the owner for the time being of the surface in respect of any damage to the surface or to any buildings thereon by reason of the exercise of the powers and rights reserved as aforesaid the amount of such compensation in case of dispute to be settled by the arbitration of two Arbitrators or their Umpire pursuant to the provisions of the Arbitration Act 1950 or any Statutory modification thereof

TO HOLD the same unto the Purchasers in fee simple SUBJECT to the provisions of a Mining Licence dated 20th March 1954 made between the Vendors of the one part and **Laporte Chemicals Limited** of the other part and to any renewal of such Licence so far as the same affects the property thereby conveyed.

By New Year 1951 work was in hand sinking New Shaft below the 380-foot level, reaching 500 feet from surface before the end of the year. In the spring of 1952 the decision was taken to make further explorations on the veins at a depth of 600 feet. To this end, a winze was sunk below a drive north from the shaft on the 500-foot level. When the 600-foot level was reached, by the end of 1952, exploration drives were commenced in order to prove the orebodies at depth which was now quite necessary as the veins in the higher levels had been extensively exploited over the previous two decades in some cases, and were thought to be

nearing exhaustion. Concern over the state of the mine's ore reserves had been growing for some time. During the period 1946-50 Col. Ramsden had made extensive notes on possible locations for as yet undiscovered veins in the locality. In August 1950 he noted, 'there are very large reserves of baryte' (in the mine). Whether his optimism was founded or not, he was soon to retire. On 29 June 1951, at the age of 75, Col. Ramsden was replaced by a Laporte man, Mr Stewart. Had Stewart been able to foresee the future he may have wished for another appointment.

From 1950 to 1954 hope was pinned on the developments at the 500-and 600-foot levels, particularly on Nos 1 and 4 veins. At the 500-foot level, among other work a cross-cut was driven from No. 3 vein in an E.S.E. direction, to intersect the Footwall vein, so called because it was first located at the footwall of No. 1 vein at the 600-foot level. It was at first, thought to be a caunter vein between Nos 1 and 4 veins, but may have been simply a small branch vein from the main orebody. Cross-cuts were also driven about 100 feet W. N. W. from No. 3 vein at the 500-foot level, through ground transversed by numerous veinlets of barytes and quartz up to 3 inches wide, carrying traces of zinc blende and galena on their margins. This stockwork was also partially transversed on the 600-foot level, where the sulphides (pyrite and galena) were more abundant than on the level above. The hope was expressed at the time that these deposits might have merited large-scale extraction. On the 600-foot level, Nos 1 and 4 veins were followed for 300 to 400 feet and stoped in places, although the footwalls of both had not been developed by 1957.

### **A deteriorating mine and a fatal accident**

Most indications suggest that the deposits in the 500 and 600-foot levels may have been economically workable, although both Nos 1 and 4 veins were narrower than in the upper levels. The stockwork was another possibility. However, a number of factors combined to make the continued existence of Bridford Mine seem less and less likely. First, the condition of the ground in the mine was causing increasing concern to the management. New Shaft was showing a disturbing tendency to 'run in every so often at a number of weak spots, and it was beginning to be doubted whether it would be usable for much longer. A more serious check on activity in the mine occurred in 1954 with a fatal accident in one of the stopes underground.

According to the report of Her Majesty's Inspector of Mines and Quarries, the manager, Mr Stewart, together with the underground foreman and a miner were in an overhead stope at a place where the barytes vein was six feet wide, standing on the 'made' floor at the foot of a ladder way leading to a level 40 feet above, when they were struck by a fall of rock. Mr Stewart was killed instantly and the foreman sustained a fracture of the spine. The fall, which came from a point approximately six feet above the head of the stope, formed part of a two-to three-feet thickness of barytes which had been left in the hangingwall when the ladder way was being driven. 'When future ladder ways of this nature are being made', the inspector concluded 'the hangingwall will be stripped'. An eye-witness account by Gilbert Gove of

Bridford and a local newspaper report, reproduced later, highlight the personal tragedy for the Bridford men who worked the mine, as well the economic implications for the owners.

### **Future doubtful**

The new manager, Mr C. F. Lloyd-Jones, had a difficult task ahead of him. The problems were mounting; the unstable condition of New Shaft, the uncertainty about ore reserves, and the increasing sulphide content in the 500- and 600-foot levels. Within a couple of years Laporte had taken the decision to cease operations at Bridford. According to Mr Lloyd-Jones, there was a recession in the demand for barytes, and so falling prices combined with declining production to make the mine increasingly unprofitable. The final decision was reached in June 1958. The 40 employees at Bridford were given an unofficial warning of the impending closure at the end of that month and a week's official notice was given to them on 24 July. When the afternoon shift had finished work on Thursday, 31 July 1958, the pumps were stopped and Bridford Barytes Mine slowly filled with water.

The local newspapers reported on the closure, stating that the 40 employees, half of them underground miners, would find difficulty in obtaining alternative employment. One correspondent described the scene at the last evening of working: 'Standing against the background of the deserted corrugated iron buildings of the mine last night, the manager, bronzed Mr Lloyd-Jones, who had been mining and oil-drilling all over the world, said: 'There are two reasons for closing the mine. The first is that the demand for barytes has fallen. We have 2,000 tons stockpiled here and it is worth around £16,000. The second is that the mine is pretty well worked out'. Another correspondent continued the story: 'The decision to close the mine was taken about a month ago and the men warned. A week ago they received notice officially. Pumps which have kept the mine free of water will now be removed and the workings flooded. About ten men will return after a fortnights holiday to give temporary help in dismantling the equipment. Asked about the future of the mine and its workings, Mr Jones said that there was no likelihood of his company opening up any other mine in the same area, and he suggested that the buildings could be used for an industry of some sort especially in view of the surplus labour now available in the district'.

The precise balance of the different factors involved which finally caused Laporte and Company to decide on closure has never been completely clear. Mr Lloyd-Jones suggested that the slack market and exhaustion of the deposits were the two prime factors. However, these were by no means the only reasons. The state of the main shaft has already been mentioned. One of the Laporte Company geologists, P. G. L. Vipan, writing on the prospects for future mining developments in the area, stated that this latter factor was the crucial one in the making of the decision.

There are two other factors which enter into the question. First, the increasing level of sulphides (iron, lead and zinc) encountered in the orebodies opened up at depth. These sulphides complicated the milling and concentrating processes, hindered the production of pure grades of barytes, and thus reduced its value on the market. Vipan's report on the

mineral potential of the area gives some detail on this point and indicates that the sulphides were showing a tendency to increase in depth. In some sections of No. 1 vein at the 500-foot level up to 5.5% lead sulphide and 5.5% zinc sulphide was encountered. In some sections of the same vein at 600 feet, less lead at about 1.3 % was encountered, but with a corresponding rise in zinc content, at up to 7.8 %. The highest sulphide contents were detected in the stockwork structure in the 600-foot level, which might have been a potential source of continued barytes production. The idea that sulphide contamination led to the closure of the mine has also found support from Mr William Wills, a local man who was long associated with the mining industry.

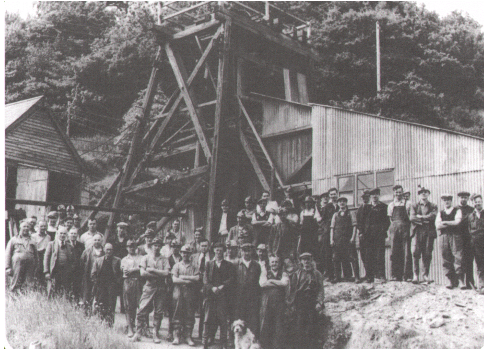
In a conversation with Mr Wills in the autumn of 1970, it was suggested that there was yet another reason for the closure of Bridford Mine. He suggested that in reality there were sufficient reserves underground, and that the problem with sulphides was not insurmountable. Given that a new shaft might have been sunk or the existing one secured, then, he argued, production could have continued for many years to come. If this is true then another factor was obviously at work in Laporte's decision. William Wills suggested that they wished to concentrate production of barytes at the mines that they owned 'in the north'. So the answer may be that Bridford fell victim to a process of rationalisation within the Laporte organisation. Via a subsidiary, Glebe Mines Limited, Laporte controls an annual production of over 20,000 tons of barytes from the Ladywash and Sallet Hole Mines in Derbyshire. This produced, along with 120,000 tons of fluorspar and 4,000 tons of lead ore a year, at these modern and highly mechanised mines. Processing takes place at the nearby Cavandish Mill, one of the largest and most modern of its kind in Europe. In this context Bridford can be seen in its true light, as a relatively small-scale, high-cost producer, unable to survive in the world of modern mining.

Since 1958 the site of Bridford has deteriorated very rapidly. The shaft was soon capped with concrete and remains in that state to this day. The machinery and headgear were removed just as quickly and today only the shells of some of the corrugated iron buildings remain, surrounded by sterile rust-coloured waste tips and muddy settling ponds covering an area of about nine acres in the contrastingly green valley lying between Bridford and the River Teign

Suggestions that the mine might reopen or even be converted into a caravan site have been discussed but have never come to fruition. So it seems likely that the mining of barytes in the parish of Bridford, tracing its origins to the third decade of the last century, has at last come to an end, and that year by year such signs of the industry as still remain will gradually disappear, either through the agency of man or by the slow hand of nature.

As an academic Schmitz recorded the historical details of dates and tonnages of mine operations. But the mine was worked by men and a more personal view is selected in the following notes recorded in July 1998 by Diana Wadia and Ted Clapton in a conversation with a long-serving employee, Gilbert Gove of New Park, Bridford.

Gilbert always wanted to be a miner; “I enjoyed mine work. It was great. I knew I was going to do it when I was at school”. He started in 1946 when 16 years old and continued until the mine closed in 1958. His father worked the pumps and a brother, a cousin, three uncles (Alf, Walt,...) and father’s uncle were also miners.



Bridford Barytes Mine  
workforce c.1950

Barytes are heavy, white crystals which are mined in vertical seams (coal is mined horizontally). Mines are 500ft. deep and are dug out in about 100ft. vertical sections; first level was at 80ft, then 170ft. Explosives at the end of the day loosened the barytes, which were then shoveled into skips. The skips were hoisted to the surface “using a great big gantry”; along the conveyor belt to the washing area. The washed barytes were loaded onto a lorry and driven to Christow Station, where they were tipped into railway trucks. The settling pits remain; water had to be treated before discharge into the Teign.

There were two shifts a day, 7am to 3pm and 3pm to 11pm. A typical shift would start with a walk to the mine entrance along the lane opposite the Teign pub. At the entrance hut, he changed into old clothes; usually bought at jumble sales. There was no clocking in because they knew each other. Helmets had carbide lamps; no cigarettes or matches were allowed. Inside the mine, there was dripping water which stained clothes red with iron oxide (obvious when drying on clothes lines). There was water running down and at their feet. The air was “not too dusty” and the mine was “very safe”; Gilbert was always careful “I am a very cautious guy” and never had an accident but he could remember that two men had died before the 1954 accident. Weaknesses in the mine could usually be heard, for example a trickling of small stones could mean an impending fall. The barytes ranged from large lumps to small grit and all were shovelled into the skip.

Tea breaks were sandwiches and plenty of cold tea, no sugar (more thirst quenching) ; the tea was not communal they all had the same system of pouring any tea that was left over into a jug to be taken down into the mine the next day as their cold tea (“special brew”!). Friday was payday and, although higher than agricultural wages, meant living from week to week. Agricultural workers also had the benefit of free milk, eggs, potatoes, and chickens. Gilbert admitted that they played cards in the mine if their shift work was completed (“but don’t forget we had done our work first”) before time to go home; George Shorland taught him to play Euchre and Crib. At the end of the shift, there was a hand basin for washing before walking home. Afterwards, he often worked in the fields or in the garden for fresh air.

Colonel Ramsden was remembered as the owner of the mine; at 6ft7ins tall, he gave the impression of a colonial officer from the South Africa campaign (*in fact a limited Company, Malehurst were the owners but no doubt Ramsden gave that impression to the employes*). Later, Laporte Chemicals owned the mine and gave notice of closure in August 1958. They

gave an early warning by advising workers to seek work elsewhere and gave redundancy pay based on years of service.

There was a major disaster in the mine on 15 September 1954 (reported in the Western Morning News on 16 September). A previously secure rockface collapsed, killing the mine manager, Mr Stuart, who came down weekly to measure, and injuring Mr Bert Waldron and Mr Charles Hamlin (Christow). Gilbert was alongside Mr Stuart but was not hurt and raised the alarm. Work was resumed as normal the following day but on a different face. This accident caused Gilbert nightmares for several years, causing him to wake up crying "I've lost my light".

*(He also recalled)* a flood in the mines which caused the Bridford Hill road to collapse and the road was temporarily diverted near Pynes. There was an aerial ropeway from the granite quarry near Southwood down to the station at Christow. Cornisbmen worked at the quarry and some in the mine; Gilbert considered them as full of ego.

The Western Morning news report of the accident read as follows –

### **DEVON MINE ROCK FALL KILLS MANAGER**

#### **Two trapped and hurt 400 ft. down**

A fall of rock in Bridford mine, 10 miles from Exeter yesterday killed the mine manager, 54-year old Mr John Stuart, and injured two other men. The men were trapped by the fall more than 400 ft. below ground. They were quickly dug out by workmates.

The injured men were the shift boss, 54-year old Mr Bert Waldron of Bridford, who received back injuries and was taken to the Royal Devon and Exeter Hospital, Exeter, and Mr Charles Hamlin, of Christow who was less seriously hurt.

From a hospital bed Mr Waldron said:

“ I was going around the workings with the manager measuring up, as we always do on Wednesdays. We were going down from the 380 ft. level and left the ladder at the bottom.

“ As we did so a smooth wall came right at us, and that was all I knew. It was what you would call a safe wall and we have never had any trouble with the walls there before. I have sat and had my food under it.

“ The other men on the shift dug us out. They got us out pretty smartly.

#### **Two-ton rock**

Between 30 and 40 miners were at work on the early morning shift when Mr Stuart, father of two daughters and a son, of Southwood Bungalow, Bridford, began his routine inspection. Mr Stuart had been in charge of the mine for three years.

Mr Gilbert Gove, one of the men on the shift, sent the first news of the accident to the pithead from 500 ft. below ground. Over the phone the message was jumbled but the men on

the surface realised that there had been some sort of accident. At first it was thought there had been an explosion.

Soon after the accident the mine's Chief Engineer, Mr William Morgan, climbed down the ladders which lead to the pit bottom and went to the face where the accident happened.

After nearly three hours he returned to the surface and said the piece of rock which had killed the manager weighed about two tons.

### **Five in 20 years**

The owners of the mine, which yields barites, a mineral used in the manufacture of paint and, among other things, toothpaste, are Laporte Chemicals Ltd of Luton, where processing is done. Mr Stuart's death is the fifth at the mine in 20 years.

Mr Morgan said the mine's seams, unlike a coalmine, ran vertically. Mining started at the bottom and work went upwards. The accident happened about 40 ft. below the 380 ft. level.

Work at the mine will be resumed today.

*WMN 16 September 1954*

Whether prompted by the accident, or as seems more likely by a Laporte accountant's financial evaluation of the commercial prospects, the mine closed four years later on 1<sup>st</sup> August 1958. Certainly the accident must have focussed Laporte's attention on the general condition of the mine and its long-term commercial viability. From press photographs of surface buildings at the time of closure it would appear that there had probably been little new investment, and the shaft and workings were in poor condition. Exploratory drives to search for new deposits at the 500ft and 600ft levels failed to prove large-scale reserves of suitable quality to continue previous years' buoyant output which had exhausted a large part of existing levels. The new deposits had an unacceptably high sulphide content, there was a recession in demand and Laportes had other mines in the country that were better suited for development.

At the same time the threat of closure of the rail link to Luton must also have been a real consideration. In fact the latter might have been more of a 'chicken and egg' situation, for although passenger services were withdrawn on the Teign Valley line on 9<sup>th</sup> June 1958 and the section from Christow to Exeter closed, a freight service to Newton Abbot was retained. However, the end of the mining and Scatter Rock quarry, with reducing activities in the remaining Valley quarries and a general run-down of the UK rail network, led to a progressive shut-down of the remaining line and sidings and final closure in the mid 60's.

### **Closure**

With the decision to end barytes production in 1958, a century of industry-related activity came to an end and Bridford reverted to its former agricultural role. The mine equipment was dismantled and the mine flooded. At the time of closure there were still forty men working at

the mine, all of whom became redundant. It is recorded that during the Napoleonic wars the citizens of Exeter considered Bridford to be sufficiently remote to provide safe sanctuary from an invading Bonaparte, despite his having fought across Europe to the gates of Moscow. A similar view apparently still prevailed in 1958 in the Exeter Employment Exchange who gloomily noted that now the railway was closed there would be difficulties in finding alternative jobs because 'Bridford and Christow are so isolated'. (the writer, who moved from the Home Counties to Bridford in 1988, even then, was struck by how few Exeter people seemed to know of Bridford despite being barely ten miles from the City centre).

However, this gloom does not appear to have depressed the men themselves who, judging by newspaper reports, considered themselves to have been fairly treated. For times before Statutory Notice and Redundancy legislation, ex-gratia payments of up to £100 may have seemed a princely sum, but it was probably barely three months wages, and the prospects were sparse. There is no mention of Union intervention and in retrospect it would seem that Laportes, as the areas biggest employer, by today's standards tiptoed away very cheaply.

Doubtless the years slowly absorbed the individual personal problems and 'the day the mine closed' has passed into history. The same cannot be said of the mine itself that seemingly remains a permanent scar on the landscape. The barytes came out of the mine as a crumbly lumpy stone, with much lead mixed in with it. The lead, which was lighter than barytes, was washed off at the 'washing tables' and ran down into the catch pits. These remain today, the ochre stained lead impregnated ground supporting little vegetation; even after 50 years, a conspicuous and seemingly permanent eyesore from the industrial past. Laportes may have dispensed with the services of its employees in a manner appropriate for the times, but it is less acceptable to understand how today, in the year 2000, Laporte plc, a prominent public company, can have absolved itself from the derelict and poisonous residues of its prosperity.

The site was sold off in 1966. There were some suggestion that the new owners intended to turn the wheel full circle and re-start mining operations, this time for the lead and zinc which had contaminated the barytes. A passing acquaintance with the lead mining history of the site should have scotched these ideas at the outset, revealing what was probably the real intent, namely to turn the 14 acre site into a residential caravan park and holiday transit camp – probably with an eye to the longer term housing opportunities. There were even suggestions of a uranium deposits attested by high radio activity readings, although this may have been evidence of radon gas prevalent in the South West or simply another ploy for some sort of planning application. If so, along with the ever-present hazards of the slime pits, it was hardly conducive to residential occupation and the site fell derelict.

The road serving the mine to Christow station, along the line of the old Bridford Quarries railway track, is now rutted but passable, and in May 2000 Exeter estate agents were advertising a building plot for £100,000 in four acres below the settling ponds. Mining is an opportunist industry that feeds and dies on fluctuating prices driven by demand. At a price probably close to four times the value of the annual barytes production in the mine's closing years, the demand for building land is now perhaps the best hope that the lure of self-interest that destroyed the site will one day restore it. Perhaps not entirely to its own former peace, but at least to protect another part of the Valley as yet untouched.