

LEAD VEINS WITHIN THE COAL MINES AROUND WHALEY BRIDGE, NEW MILLS AND BUGSWORTH, DERBYSHIRE

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Abstract: The somewhat unusual circumstance of the mining of lead ore in conjunction with the coal seams in the Goyt Valley District was carried out at several coal mines with, in one case, substantial quantities of lead ore worked. The possible locations of the veins are discussed, along with their output and specific history. The district, for lead mining purposes fell within the area of customary mining laws of the High Peak

INTRODUCTION

The coal mines of the areas under discussion have been well documented by previous researchers (Leach 1992, Brumhead 1987, Hull and Green 1866, Stevenson and Gaunt 1971, Barnatt and Leach 1997, Roberts and Leach 1985) but little has been said about the lead veins that some of these collieries encountered. It is not widely known that lead ore has been mined in the Peak District in areas away from the limestone plateau and its immediate environs. During analysis of the Barmasters' books of entries for Castleton Liberty held at the Derbyshire Records Office and Chatsworth House, covering the years 1789-1894 (Heathcote, in preparation) numerous references were noticed concerning mining of lead ore within the coal seams associated with the Goyt Trough around Whaley Bridge, Bugsworth and New Mills which are well to the north-west of the limestone outcrop of the White Peak. Although in the majority of cases the amount of lead ore raised was insignificant, one case stands out from the rest, the Waterloo Colliery or Gisbourne's Pit at Whaley Bridge (Plate 1).

Throughout this article the original name of Bugsworth not the modern Buxworth will be used as in the mining documents seen by the writer.

GEOLOGY

The Goyt Trough comprises gritstones and shales containing coal seams, the principal and most worked being the Yard Coal. Old mine plans show the extent of these abandoned workings from Fernilee in the south to New Mills in the north. The Waterloo Colliery worked all of the sequence of seams (see Table 1 below) to the east of the River Goyt at Whaley Bridge from 1815 until 1911 when mining terminated (for a more detailed account of the geology of the area see Stevenson and Gaunt 1971).

Several lead veins cutting through the coal seams are known. In

at least some instances they comprise pure galena with no gangue minerals, apart from a little iron pyrites. These veins have not been accessible for modern geological study; it is assumed that the mineralisation occurred at the same time as that further south on the limestone plateau, but this requires specialist geological assessment. Similarly, while the majority of veins on the limestone plateau fringes are not mineral-rich where they extend into shales above, this does not mean mineralising fluids did not pass here (Quirk 1993); it may well be that ore deposition as the fluids passed through sandstones and the Coal Measures is different from in the shale-dominated strata below.

THE NEW MILLS AREA MINES

The New Mills area (Fig. 1) has seen extensive working for coal within the Red Ash, Little Mine and predominantly the Yard Seam with a total of over 30 coal mines recorded, the earliest of which is documented in 1650 (Brumhead 1987).

Pingot Pit

An isolated reference made by the Barmaster states (10/8/1824: Chats. Bar. Coll.):

Robert Bennett, Anthony Southern, Edward Clayton and Ralph Clayton gave one dish of ore to free a Founder Meer in a New Vein in Pingot House Farm in the Liberty of Glossop.

The exact location of this lead vein within the Coal Measures is not known but Pingot House Farm and the nearby Pingot Pit are at SK 014 853 on the western flanks of Ollersset Moor to the east of New Mills. Only one dish was given at this location so it therefore seems that the venture was unsuccessful.

True Blue

A year later the Barmaster recorded the freeing of another vein to the east of New Mills (17/8/1825: Chats. Bar. Coll.):

George William Newton Esq. gave one dish of ore to free a Founder Meer in a New Vein in his farm in the Liberty of Ollerssett and Parish of Glossop and called it True Blue.

And a week later (22/8/1825: Chats. Bar. Coll.):

Laid George Newton his Ground out at True Blue in the Liberty of Ollerssett and sold him the Lords Meer for the sum of £5.

Therefore George Newton obtained the Founder Meer and Lords Meer on the range of this new vein. Unfortunately the

Table 1. Seams worked by the Waterloo Colliery, Whaley Bridge 1815-1911.

Seam.	Depth at Pithead
Big Smut	20 yards
Big Smut	32 yards
Red Ash	67 yards
White Ash	87 yards
Gannister	93 yards
Yard	127 yards

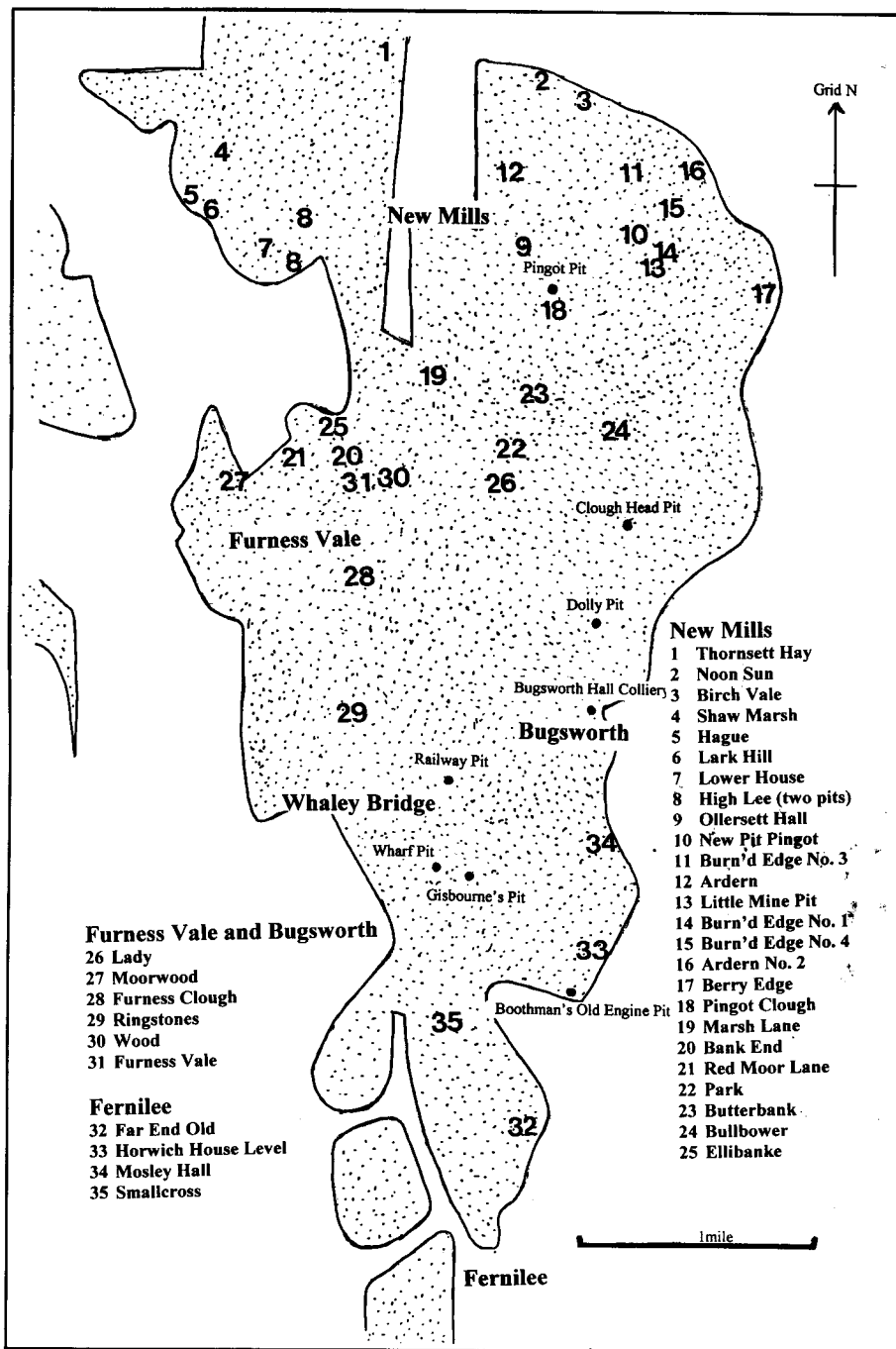


Fig. 1. Extent of Yard Coal extraction with coal mines of the New Mills, Bugsworth and Whaley Bridge areas. After Stevenson and Gaunt 1971; Leach 1992.

Barmaster has not recorded in which direction the vein lay. This short-lived venture produced only 6 loads 4 dishes (about 1½ tons) of ore in 1825 but nothing subsequently.

BUGSWORTH AREA MINES

This area like New Mills has seen coal mining activity within the various seams located within this area (Fig. 1). These were mined from large pits such as Dolly Pit SK 0219 8308 and Bugsworth Hall Pit SK 0200 8230 and several smaller ventures (Watson 1993).

Old Croft Meadow

The Barmaster recorded one instance where a vein of lead was freed along a length of some 384 yards (16/10/1847: Chats. Bar. Coll.):

Henry Drinkwater gave one dish of ore to free a Founder Meer in a New Vein ranging NorthWest and SouthEast in a field called Old Croft Meadow which was discovered in the Half Yard Mine in the Township of Bugsworth and called it Old Croft Meadow. Looked over 11 Stowes standing NorthWest from the Meer Stake and 1 Stowes SouthEast from the Meer Stake, *all in Good and Lawful Possession.*

The exact location of this vein is not known, but a coal mining lease of 1853 for the Clough Head estate records that the Half Yard Seam was located in this area (Brumhead 1987) so it is likely that the vein was in this general vicinity. Clough Head is at SK 0258 8357 on the hillside overlooking Dolly Pit. A tramway connected Clough Head pit to the canal basin at Bugsworth. This tramway was in operation from 1799 to 1820 (Watson 1993).

Only the meer dish is recorded in 1847 and no more ore was measured at the mine until 1850 when a further 1 load 3 dishes are recorded.

Bugsworth Station

Kenworthy (1915) noted the following:

... an account of a vein of lead ore having been discovered at Bugsworth Station, sandwiched in the gritstone rocks, when the Midland Railway was widened at that place some years ago. . .

Bugsworth Station, now disused, was located at SK 022 823 to the east of Bugsworth Hall Colliery. It is not recorded or known if the workings of this colliery ever reached beneath this area. From the terminology used the vein was discovered during surface work at this locality.

WHALEY BRIDGE AREA MINES

Whaley Bridge, like New Mills and Bugsworth, has seen much activity regarding coal mining within the seams previously mentioned (Fig. 1). The history and geology of these mines has been well documented by previous researchers (Leach 1992, Hull and Green 1866, Stevenson and Gaunt 1971).

The immediate area centred to the east of the village, under the areas known as Horridge and Throstledale, was the location of one of the largest collieries, the Waterloo Colliery, known locally as Gisbourne's Pit. The main 19th century pithead was at SK 0122 8117, close to the junction of the Old Road and Bing Road (Plate 2). In the late 1850s the colliery was under the ownership of the Buxton Lime Company (later Buxton Lime Firms Company).

The Castleton Barmaster made numerous entries regarding this mine and analysis of the ore accounts has revealed that a fair

amount of lead was won from within the coal seams worked by this colliery. However, this opened in the early 19th century and one earlier reference to a lead vein in this vicinity is also known.

Horse Ridge Coal Pit

The first and subsequently the earliest entry yet located within the Barmasters ore accounts dates from 1789 (10/11/1798: DRO D1154 G/L 7):

Robert Longsdon at the Horse Ridge Coalpit. 103 dishes.

No entry is made regarding freeing of ground at this location, which seems peculiar. The reference is of interest because it gives the alternative name for Horridge as the 'Horse Ridge'. The exact location of this lead vein is not known. The only recorded output from this mine was the 11 loads 4 dishes (about 3 tons) noted above.

Waterloo (Gisbourne's) Colliery

This was opened in 1815 to exploit the seams to the east of the River Goyt and in 1822 the first of many entries regarding the freeing of ground at this locality appears (8/11/1822: Chats. Bar. Coll.):

Walter Joseph Gisbourne gave two dishes of ore to free a New Vein in Higginbothams Farm on Horridge in the Liberty of Chapel-en-le-Frith and called it Waterloo.

Thus begins the documented history of the mining of lead ore at Waterloo Colliery. From this date until 1839 a total of 15 meers (480yds) were freed in an easterly direction from the founder within Chapel-en-le-Frith Liberty. An entry of 1838 refers to the sale of a Lords Meer at the mine (6/3/1838: Chats. Bar. Coll.):

Jonathan How, Barmaster, on behalf of His Grace the Duke of Devonshire sold to Mr. John Srigley, as Agent to Messrs. Gisbourne, a Lords Meer at their mine at Waterloo in Chapel-en-le-Frith Liberty, for the sum of £5.

Unfortunately the location of this meer is not recorded so it is therefore impossible to state whether it was to the east or west of the founder meer. In 1845 2 meers were freed to the west of the founder meer, and in the following year a further meer was freed at this locality. This gives the total of ground freed at the mine as 20 meers (640yds) (15 east and 3 west of the founder meer plus the

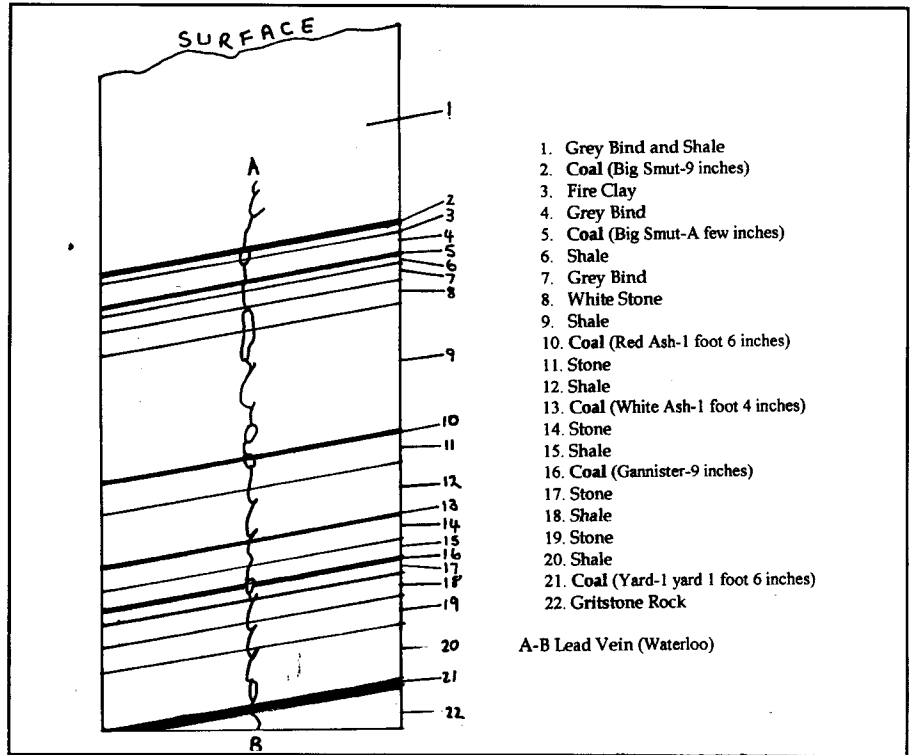
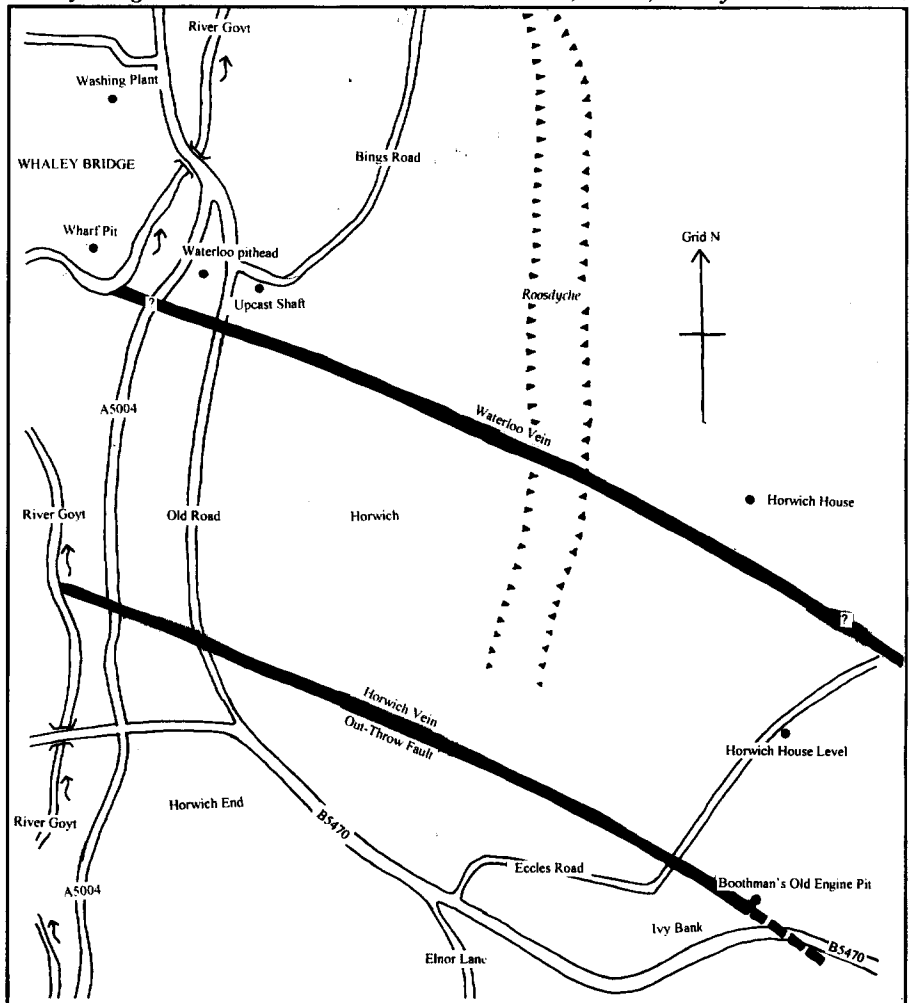


Fig. 2. Section of strata and vein in Mr Gisbourne's Colliery at Horridge End (Waterloo Colliery). Adapted from Binney 1852.

Fig. 3. Postulated position of Waterloo Vein and Horwich Vein at Gisbourne's Pit, Whaley Bridge. Based on Abandonment Plans Nos. 3874, 5636A; Binney 1852.



unlocated Lords Meer).

1845 is the last time that ground was freed at Waterloo Vein on Horridge but lead ore continued to be mined from the vein until 1850. In 1850, the following is recorded by the Barmaster (25/5/1850: Chats. Bar. Coll.):

Thomas Gisbourne Esq. gave one dish of ore to free a Founder Meer in a New Vein upon Horwich and Called it Horwich Vein.

Thomas Gisbourne Esq. gave one dish of ore to free a First Taker Meer East from his Founder at Horwich Vein in Chapel-en-le-Frith Liberty.

The above entry is obviously referring to a vein separate from Waterloo Vein. A short time later the following entry appears (19/5/1850: Chats. Bar. Coll.):

Put Septimus How and Jacob Dakin into Mr. Gisbourne's Mine called Horwich Vein in Chapel-en-le-Frith Liberty to value a Lords Meer and they put a value of £5 upon it.

Although in this instance the location of this meer is not recorded, this aspect is corrected in a later entry of March 1853 (see below).

The following entries are very specific in the detail they contain regarding the freeing of the ground at Horwich Vein (19/2/1853: Chats. Bar. Coll.):

John Srigley on behalf of T.G. Gisbourne Esq. gave six dishes of ore to free a First, Second, Third, Fourth, Fifth and Sixth Taker Meer West from their Old Founder at Horwich Vein in Fernilee Liberty.

Just over a month later this very detailed entry is recorded by the Barmaster (24/3/1853: Chats. Bar. Coll.):

Jonathan How, Deputy Barmaster for Fernilee Liberty, laid out the Ground at Horwich Vein as freed on May 25th 1850 for a New Vein. Laid his Founder Meers East and West from his Founder Stake and the Lords Meer at the West End of his Founder Meer. Laid 6 Meers at the West End of the Lords Meer as freed on February 19th 1853 and 2 Meers and 9 Yards not freed up to the boundary of Derbyshire and Cheshire. Laid him a First Taker Meer East from his Founder Meer as freed on May 25th 1850 and 21 Meers and a Half Meer not freed up to the boundary fence that parts T.G. Gisbourne Esq. land and W.J. Boothman Esq. land. Jacob Eyre and Levi Bennett, 2 of the 24 Men.

Analysis of the above entries reveals that a total of 10 meers were freed (2 east and 7 west from the founder meer) plus 21 meers and 16 yards, laid out but not freed to the east of the first taker meer east (in Chapel-en-le-Frith Liberty) and 2 meers and 9 yards, laid out but not freed to the west of the sixth taker meer west (in Fernilee Liberty). This gives a grand total of the ground obtained on Horwich Vein as 33 meers and 25 yards (1081 yds.). It is obvious that the 'founder stake' was located directly on the boundary between Chapel-en-le-Frith and Fernilee Liberties. The reference to

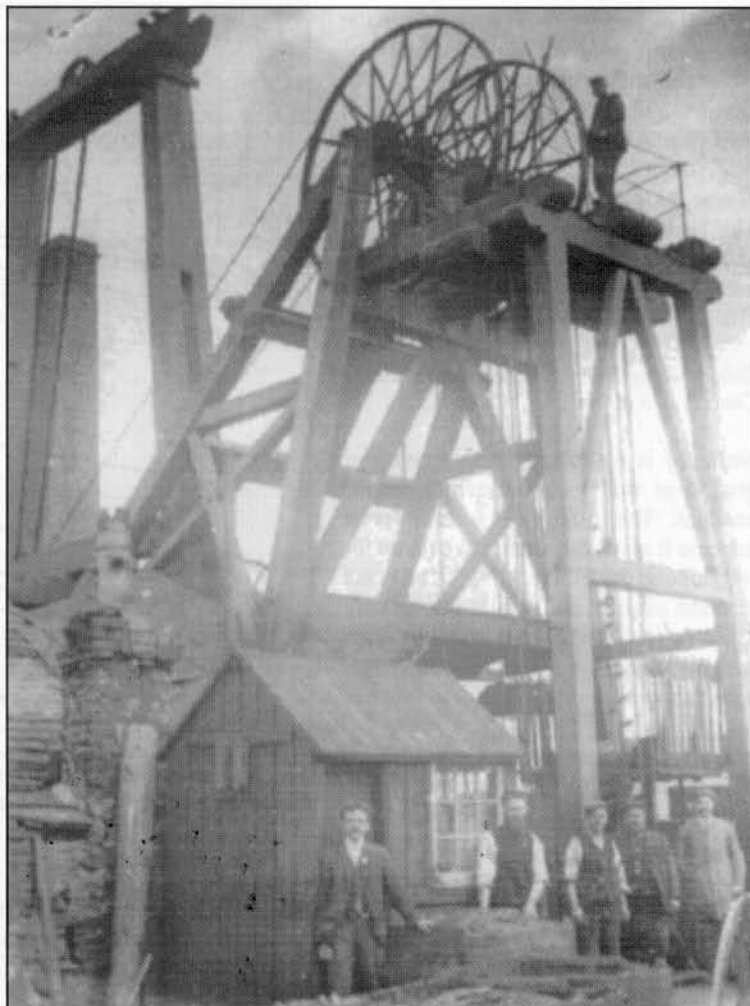


Plate 1. Waterloo (Gisbourne's) Colliery Pithead showing headframe, shearlegs and chimney beyond. (Private Collection).

this 'stake' is of interest because the vein was obviously located at depth within the coal seams therefore the usual sinking of a 'founder shaft' was not required and this was replaced by the mentioned 'stake'. Incidentally this practice was often used at the mines located on Eyam Edge (J. Rieuwerts pers. comm.). The terminology used in a later entry is confusing (18/6/1856: Chats. Bar. Coll.):

Plate 2. Waterloo (Gisbourne's) Colliery Pithead from Old Road, showing headframe, shearlegs, chimney and winding-house. (Private Collection).



Thomas Guy Gisbourne Esq. gave one dish of ore to free a First Meer of Ground East from his Founder at Horwich Vein in Fernilee Liberty.

Why the Barmaster refers to the above meer being in Fernilee Liberty and not Chapel-en-le-Frith Liberty as recorded on May 25th 1850 (see above) is not known. Perhaps it is simply a clerical error?

This is the last Barmaster's entry that records the freeing of ground at Horwich Vein although further lead ore was mined from the vein in 1858 and 1876.

Bagshaw's *Derbyshire Directory* (1846) states the following:

A lead mine, running nearly east and west, cuts vertically through the coal strata, which has been worked for more than twenty years, yielding a very fine ore. It is almost invariably fruitful when it passes through the last of the three coal strata mentioned, (Red Ash Seam) and yields specimens of a rib of lead ore with the pure coal adhering to each side

The above must be a reference to the Waterloo Vein because at this date the parallel Horwich Vein (see below) had yet to be freed and worked.

In 1849, E.W. Binney wrote a very detailed article accompanied by a section (Fig. 2) concerning the veins at Waterloo Colliery he had observed in 1847:

The fissure in which the sulphuret of lead is found, runs about N.E. and S.W. . . .

About 400 yards to the south of Mr. Gisbourne's vein (Waterloo) is another, running parallel to it (Horwich). The first named vein (Waterloo) is nearly vertical, but hades a little to the north. There is no heave in the strata showing a displacement, the level of the coal on each side of the seam being the same.

The vein (Waterloo) has been proved to extend from the gritstone, to within about 20 yards of the surface, and it probably proceeds up to the grass.

The fissure (Waterloo) appears to be a simple crack, traversing the different strata, and bears lead about equally in all the beds, whether they are arenaceous or argillaceous. No vein stuff is found with the lead except a little iron pyrites, and the lead appears adhering to the walls of the mine, without either sparry or ochery matter intervening. The vein is often nipped, and varies in thickness from nine inches to thin threads in thickness. Where it separates into threads, it traverses the shales and sandstones vertically.

The strata composing the sides of the vein (Waterloo), very unlike those near the veins of barytes at Grimshaw Delph (in Lancashire), show no traces of the action of heat; the joints of the stone and shale near the sides of the vein have a little more vertical cleavage than those rocks have at a distance from it, but that is the only difference which appears. In the 18 inches seam, the lead goes through the coal without in any degree affecting it; for the latter is just as bright and bitumous there as it is in any other part of the seam, and appears to be in no way altered by being in contact with the former. I examined the vein chiefly in the vicinity of the 18 inch coal . . . (Red Ash Coal)

The main features of this vein (Waterloo) are the following; namely, the freedom of the metal from vein stuff, and the bright condition of the coal found in contact with the lead.

The first fact would seem to indicate that the solution from which the sulphuret of lead was precipitated, had been far purer and freer from other salts than is generally the case with veins of sulphuret of lead, either in carboniferous or limestone districts . . .

In the present instance, the vein stuff seems to show that the metal has not been separated from the rocks which enclose it, but it has been introduced into the fissure in a state of solution, un-mixed with other mineral substance, and then precipitated . . .

The second fact above alluded to, namely, the bright condition of the coal in contact with the lead, seems clearly to prove that the lead could

never have been injected into the fissure in a hot state, or the coal would have been coaled and burnt . . .

This account of Mr. Gisbourne's Vein, which must be the Waterloo Vein (see below) is very interesting for several reasons. Firstly, the vein described as being '400 yards south of Mr. Gisbourne's vein' must be a reference to Horwich Vein (see below). Secondly, this vein, like the one described below at Axe Edge, was not accompanied by gangue minerals and the coal adhering to it showed no sign of heat. The latter is an oblique reference to the prevailing Neptunian and Plutonic theories of mineralisation (L. Willies. Pers. comm.). The vein at Waterloo Colliery was also described by Hull (1866):

. . . but the largest quantity of ore has been obtained in Mr. Gisbourne's colliery in the rock below the Red Ash Mine, although the lode itself has been traced through all the strata down to the Big Mine roof, in which it was pointed out to me.

The ore, however, was almost entirely confined to the rock below the Red Ash Mine, in which the lode was as much as 24 inches in width, and yielded 60 or 70 lbs. weight per dish of ore. The lode 'perished' in the centre of the basin, but southward became very rich, and has now been worked out. In the Big Mine (Yard Seam) the lode occurs as a small fault, and contained small pieces of ore . . .

It is clear from the above accounts that the lead vein was richest in the vicinity of the Red Ash Seam and became poorer at depth in the vicinity of the Yard Seam. What is not quite so clear is the various directions given when describing the range of the vein. Bagshaw (1846) gives an east-west orientation, Binney (1847) gives it as NE-SW and Hull (1866) gives its orientation as southward. When the Barmaster was freeing meers at the vein he always stated an east-west orientation. The current writer believes, albeit unproven, that the Barmaster when describing the course of a vein was the most reliable source for its true range.

By analysing the Mine Abandonment Plans and piecing these together with the various descriptions of the veins, it is now possible to identify the exact locations of both Waterloo and Horwich Vein (Fig. 3).

Horwich Vein

In describing the specific features associated with the Waterloo Vein, Binney (1849) noted that '...about 400 yards to the south of Mr. Gisbourne's vein is another, running parallel to it...'. (see above). This must be a reference to the Horwich Vein and it is clear that the vein had been noted at this time but had yet to be freed and subsequently worked. The Barmaster in laying out the ground at this vein was very specific in the detail he gave regarding the ground freed. He noted that the easterly meer terminated at '...the boundary fence that parts J.C. Gisbourne Esq. land and W.J. Boothman Esq. land'. (see above). Mine Abandonment Plan No. 5632A shows the location of Boothman's Old Engine Pit at SK 0190 8146, and it is known that a lead vein was freed at this location in 1821 (see below) it is therefore feasible to suggest that this could be the location the Barmaster was referring to. The same plan shows an 'out throw fault' running in a roughly east-west direction from this location which marks the southern boundary of the workings of Waterloo Colliery. The westerly extremity of the colliery workings along this fault terminate on the eastern bank of the River Goyt. This corresponds with the detail recorded by the Barmaster, who stated that '... 2 meers and 9 yards not freed up to the boundary of Derbyshire and Cheshire . . .'. (see above). If the total meers (33 meers and 25 yards) recorded by the Barmaster are measured eastwardly from the River Goyt along this fault line

they terminate slightly to the east of Boothman's Old Engine Pit. This is confusing and at present remains unexplained.

This vein 400 yards to the south of Waterloo Vein started ore production in 1850 when 3 loads 2 dishes were measured, presumably from the founder meer and adjacent first taker meer east and the lords meer. The following years of 1851 and 1852 saw no ore production, this was resumed in 1853 and continued until 1856 with a total of 414 loads 6 dishes being measured at the mine. Incidentally the ore output produced during 1853-4 rivalled that of Waterloo Vein but this was only short-lived. During this period a further 6 meers west of the lords meer were freed along with 23 meers and 20 yards which were not freed. It is therefore presumed that the majority of the ore came from the 6 meers west of the founder. 1857 was not productive but a further 6 loads 7 dishes were measured in 1858. From this date until 1875 no lead was mined from the vein. The last ore was measured in 1876 and totalled 1 load 4 dishes. This gives the total ore output from the Horwich Vein as 426 loads 1 dish or some 106 tons (see Appendix).

Waterloo Vein

The only clue to the location of Waterloo Vein is given by Binney (1849) and if the distance from Horwich Vein (400 yards N) is measured on the abandonment plans it places the vein at SK 012 809 to the south of the main winding shaft at SK 0122 8117. Nothing is shown on any abandonment plan seen by the writer to indicate the vein's presence, but these were compiled at a much later date after the vein was worked, and only show where the coal had been removed. Horwich Vein (see above) was undoubtedly situated within the noted fault line, whereas Waterloo Vein was described by Binney as 'The fissure appears to be a simple crack, traversing the different strata . . .' therefore no fault existed at this location and as Binney stated 'There is no heave in the strata showing a displacement, the level of the coal on each side of the seam being the same'. It is therefore presumed that as the vein was removed the coal within the adjoining seams was also removed, subsequently there was nothing to show concerning Waterloo Vein.

From the details given by the Barmaster concerning Waterloo Vein it is possible to ascertain the sequence in which the vein was worked. It is known that the vein was contained within the coal seams and these seams rise as they continue eastwards from the River Goyt and indeed outcrop to the east of Horwich House. It is clear from the Barmasters entries that the vein was worked eastwardly possibly in the area of the shallower Red Ash Seam and the more eastwardly range of the deeper Yard Seam. Bagshaw (1846) describing the colliery, records that previous to 1846 '... a powerful engine (was) put down for getting this coal. It is likely that this was a reference to a pumping engine which was installed to un-water the coal seams as they dipped to the west. A pumping shaft is shown on the abandonment plans (5632A, 3874) along with the main winding shaft and the ladder shaft, all of which were in close proximity to each other at the main pithead (SK 0122 8117). Ore production rose dramatically after 1837 (see below and Appendix) possibly indicating the date for the installation of a pumping engine at the mine. This would have subsequently allowed mining to be continued deeper within the easterly meers as the vein followed the coal seams down-dip in a westerly direction. As the easterly meers became exhausted the Barmaster freed meers to the west of the founder in 1845-6 and ore output rose steadily but started to decrease until 1850 when mining lead ore from the vein ceased. Obviously the deeper westerly meers were not as rich as the

easterly meers which could indicate that the vein became impoverished at depth. Alternatively the meers could have been located within the deepest worked part of the colliery within the Yard Seam and it would have been uneconomical to drain the workings deeper than the horizon of this seam purely to mine lead. It could simply be that the lead vein was worked where the coal seams were being worked at that particular time. Also at this date the parallel Horwich Vein had been freed and it appears that due to the length of ground freed at this vein (+33 meers) Messrs. Gisbourne possibly believed that it was going to be as rich as the Waterloo Vein. The evidence held within the ore accounts (see above and Appendix) reveals that this was not to be the case.

Waterloo was by far the most productive of the two veins freed at this colliery. The period 1822-1825 saw a total of 404 loads being measured at the mine. This ore was mined from the founder meer and the five meers subsequently freed to the east. 1826-1834 saw no ore production at the mine. The reason for this is not known but, perhaps, coal production became paramount as the colliery was developed or that they had started mining coal in a different part of the colliery away from the vein. Lead ore production resumed in 1835 with 40 loads 4 dishes being measured at the mine. 1836 was again a year of no lead ore production. The period 1837-1844 saw a dramatic increase in ore production as a further ten meers were freed eastwardly in the vein. At this time 2055 loads 2 dishes were measured at the mine. Three meers were freed to the west of the founder meer in 1845 and 1846 and the ore measured at the mine during 1845-1848 totalled 703 loads 3 dishes, presumably mined from within the three westerly meers. 1849 was not productive and the last ore measured from the Waterloo Vein was in 1850 with a total of 37 loads 7 dishes. This gives a total ore output from the Waterloo Vein as 3240 loads 7 dishes or 810 tons (Appendix 1).

Significant dates and the Gisbourne 'mindset'

By collating all of the known information regarding the veins at Waterloo Colliery it is possible to summarise the Gisbourne developments:

1789 A lead vein was freed on the Horse Ridge (see above) by Robert Longsdon.

1815 Thomas Guy Gisbourne opened Waterloo Colliery. He was probably well aware of lead veins in the vicinity.

1821 Thomas Boothman freed a lead vein (see below) at Ivy Bank, south of Horridge. Gisbourne must also have been aware of this.

1822 Colliery workings headed eastward under Horridge. A lead vein encountered and subsequently freed was named Waterloo Vein (see above).

1822-1850 Waterloo Vein was worked almost continuously, and proved to be quite rich. The last ore was measured in 1850. Colliery workings followed coal seams to the south.

1850 The southern workings encountered the 'out-throw' fault containing the lead vein last worked by Boothman in 1821. The vein was freed and named Horwich Vein (see above).

1850-1858 Horwich Vein worked almost continuously. Periodically, for brief periods, the ore output equalled that of Waterloo Vein.

Late 1850s The colliery came under the ownership of the Buxton Lime Company.

1859-1875 No ore was mined, possibly because the Buxton Lime Company concentrated working to the north of the pithead away from the area of lead veins.

1876. The last ore was measured from the Horwich Vein.

The Bolsterstone Connection?

When Binney (1849) described the veins at Waterloo Colliery he also stated the following:

... the miners of the neighbourhood believe that the vein of lead crosses Edale. If this be true, the direction of its course northeastwards points towards Bolsterstone chapel, near which place the late Mr. Farey, in vol. 1. p. 270 of his survey of Derbyshire, in his list of mines, gives the following: 'Wigtwizle, near Bolsterstone chapel, N.W. of Sheffield, Yorkshire, in grit (perhaps alluvial), lead, black jack, copper ...' About ten years ago a vein of sulphuret of lead, said to be very rich in silver, was found near to Bolsterstone, at Deepcar, in Lower Coal Measures.

It seems highly unlikely that the veins at Whaley Bridge connect with the veins at the above location. Coincidentally this location has seen much lead mining and provides a further example of lead veins occurring in the lower coal measures (for more details see Kenworthy 1915).

Surface Remains

Little remains of the colliery which closed in 1911. By far the most significant feature that remains today is the well-preserved engine house situated near the bottom of the steep Bings Road at SK 0127 8112 (Plate 3). This tall building, possibly for a winding engine, is now part of a private residence along with the aptly named Winch Cottage. The concrete-capped shaft associated with this building is said to be about 400 feet in depth. This is feasible because if this engine was winding to the Yard Seam then it would be about 400 feet deep at this location. The small stone structure atop the building is believed to be the remains of the chimney stack. It is unclear where the boiler house was located. There are two possibilities, firstly it could have been the long building directly behind the engine house or secondly it could be a small lean-to type building to the side of the main building (Plate 4). The shaft associated with this engine house is named as the 'Upcast Shaft' on all of the mine abandonment plans seen by the writer.

The building recorded on a plan made by the Midland Railway Company in 1854 and described as 'Shed and Machines for Washing Lead Ore belonging to Thomas Guy Gisbourne' (Bill Eyre, pers. comm.) still survives amongst other buildings. The building is a long two storey structure which

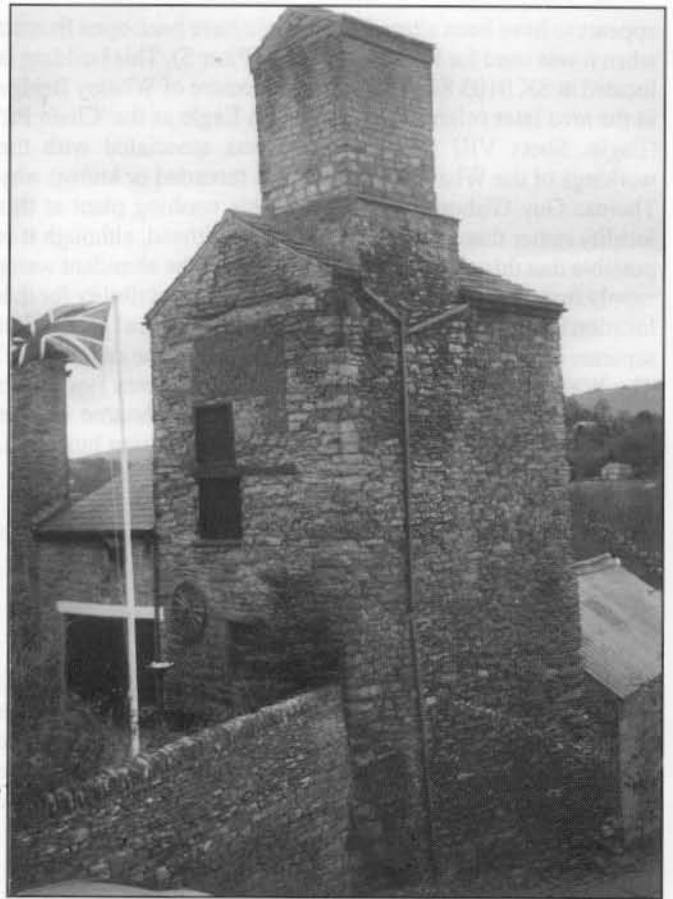


Plate 3 (top). Waterloo Colliery Upcast Shaft engine-house with possible boiler house to the left. (Photo: L. Willies).

Plate 4. The Upcast Shaft engine house with possible boiler house in forefront.

Plate 5 (bottom). Buildings surrounding Gisbourne's washing plant (at the centre). (Photos: J. Barnatt).

appears to have been altered but it might have been open fronted when it was used for lead ore dressing (Plate 5). This building is located at SK 0103 8125 almost in the centre of Whaley Bridge in the area later referred to by William Eagle as the 'Chain Pit' (Eagle. Sheet VIII II). This shaft was associated with the workings of the Wharf Pit and it is not recorded or known why Thomas Guy Gisbourne would have his washing plant at this locality rather than at the main Waterloo pithead, although it is possible that this site was chosen because of the abundant water supply from the adjacent River Goyt. Another possibility for this location being chosen could be to keep lead and coal production separate or due to the fairly close proximity of the canal wharf. The Wharf Pit was under the ownership of Thomas Boothman at this time and it is possible that he and Gisbourne had an unwritten agreement for the latter to use the existing buildings.

Lead miner at Waterloo Colliery?

In the 1871 census for Whaley Bridge (cited in Leach 1992) the following is recorded:

Joshua Hall, aged 58, a lead miner of Middleton' (Derbyshire).

It is possible that this man had been employed at the Waterloo Colliery, perhaps at both the Waterloo Vein and later at Horwich Vein. He could have been employed simply to give his expertise in lead mining techniques. Alternatively Joshua Hall could have simply been temporarily staying in Whaley Bridge at the time the census was undertaken.

Boothman's Old Engine Pit

An 1821 entry records (30/12/1821: Chats. Bar. Coll.):

Thomas Boothman gave one dish of ore to free a New Vein in a Coalpit on Horridge in Chapel-en-le-Frith Liberty.

Boothman's Old Engine Pit is known to be located at SK 0190 8046 on Ivy Bank and overlooking the main Whaley Bridge to Chapel-en-le-Frith road. This is the only location known to have been worked by Thomas Boothman on Horridge, therefore it is highly likely that this is the location of the lead vein (Horwich Vein) which was subsequently freed in 1850 by Messrs. Gisbourne (see above). The only ore measured from this mine was obtained from the single meer freed in 1821 and totalled 4 loads 1 dish or about 1 ton.

Mr. Srigley's Pit

The shaft section in the Geological Survey (Hull 1866) of Mr. Srigleys Pit (exact location unknown), described as being ½ mile north of Whaley Bridge shows a vein of galena located below the Red Ash Coal.

No details of this vein are known. The location noted is possibly a reference to the Railway Pit (SK 0105 8164) which was located in the vicinity.

OTHER MINES IN THE GOYT TROUGH AREA

Navigators Venture

An isolated reference to another lead vein located within Chapel-en-le-Frith Liberty is recorded in 1805 (15/6/1805: Chats. Bar. Coll.):

Mr. Brown and Partners gave one dish of ore to free a First Taker Meer West from their Old Founder at Navigators Venture in Chapel-en-le-Frith Liberty.

The freeing of the founder meer is not recorded in the

Barmasters book of entries but lead ore was obtained from this vein from 1801 so the founder meer must have been freed on or previous to this date. The location of the vein or whether it was within a coal seam is not known.

As stated above lead ore was measured at this mine in 1801 and totalled 15 loads 2 dishes. 1802 was an unproductive year with ore production resuming in 1803 and continuing to 1806, the total for this period being 16 loads 8 dishes. This gives a total production figure of 32 loads 1 dish or about 8 tons.

Calfhey Wood

Mr. Walker of Whaley Bridge was searching for a reputed rich vein of lead in Calfhey Wood near Brownhill Farm, Fernilee. (27/8/1908: Chats. Bar. Coll.).

The location of Calfhey Wood is at SK 0185 7650 overlooking Fernilee Reservoir. Brownhill Farm is no longer occupied and is in a ruinous state. It is possible that this man is related to the two members of the Walker family killed at Walker's Adit in Whaley Bridge at SK 0101 8045 in 1905 (Leach 1992).

Thatch Marsh Colliery-Axe Edge

Veins of lead ore have been recorded in the Coal Measures to the southwest of Buxton at Axe Edge (centred SK 028 710) by both Short (1734) and Watson (1811) but the latter writer is the more descriptive:

... at Thatch Marsh near Buxton, veins of Sulphuret of Lead are found in faults having coal attached on both sides accompanied with Sulphuret of Iron.

Lacey (1862) gives the following description of the vein at Thatch Marsh Colliery:

... a vein which cuts, in a nearly vertical direction, through a seam of coal at Axe Edge, Derbyshire. The coal is 60 yards above the limestone, and where in contact with the lead, is not charred or altered in any way; clearly showing that the lead was not introduced in a heated state. The vein of galena is about three inches in thickness, and is contained in a fracture of the strata, or fault, which passes through the rocks above and below the seam of coal. It has been followed about 15 yards above the coal without presenting any indication of swelling out to a workable thickness; but at present it has not been examined below the level of the coal, on account of the accumulation of water in that direction.

The limestones to the east of Axe Edge in the area of Stanley Moor (SK 045 715) and Anthony Hill (SK 047 705) are known to contain small lead veins and it is possible that the vein in Thatch Marsh Colliery (centred SK 028 710) is the westerly continuation of one of these.

Taxal

A document dated c.1720 refers to the following at Taxal (SK 007 799) (Leach 1992):

... and a vein of lead ore lately discovered.

The location of this vein is not known but coal mines are mentioned in the same document so it is possible that this could be an early reference to a lead vein in a coal seam.

Fernilee

The Geological Survey records that thin strings of lead ore were discovered in two boreholes located at Fernilee. (Stevenson and Gaunt 1971).

CONCLUSION

The presence of lead ore in the coal seams of the Goyt Trough at Whaley Bridge has definitely been known from as early as 1789. Previous to the current research little was known of their extent at Whaley Bridge and their distribution within the surrounding areas of New Mills and Bugsworth. The amounts of lead ore produced at the collieries was not known until analysis of information in the Castleton Barmasters ore accounts was undertaken. While most recorded veins produced only small amounts of ore, that at Waterloo Colliery was significant. The lead produced made a significant contribution to the output value of the mine. It is clear from the ore accounts that the output of lead ore from this colliery (916 tons) was on many occasions comparable with and sometimes greater than the output from more well-known medium-sized lead mines within Castleton Liberty e.g. Ashtons Grove, How Grove, Hollandtwine.

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Whaley Bridge (Waterloo) Colliery. Yard Seam Abandonment Plan No. 5632A n.d. Mining Records Office, Mansfield.

Whaley Bridge (Waterloo) Colliery. Red Ash Seam Abandonment Plan No. 3874. c.1899. Mining Records Office, Mansfield.

Chris Heathcote

Appendix 1. Lead ore production from Waterloo Vein and Horwich Vein, at Waterloo (Gisbourne's) Colliery, Whaley Bridge.

Year	Loads-Dishes	Year	Loads-Dishes
Waterloo Vein		Horwich Vein	
1822	12-5	1850	3-2
1823	12-6	1851-52	No ore
1824	194-3	1853	161-7
1825	146-5	1854	179-1
1826-34	No ore	1855	62-1
1835	40-4	1856	11-3
1836	No ore	1857	No ore
1837	322-2	1858	6-7
1838	507-1	1859-75	No ore
1839	310-0	1876	1-4
1840	404-1		
1841	27-4		
1842	79-1		
1843	190-4		
1844	214-5		
1845	390-6		
1846	199-3		
1847	83-4		
1848	29-7		
1849	No ore		
1850	37-7		

Note: there are 9 dishes per load and about 4 loads per ton. The figures include duty ore paid.