

The Nailsea Coalfield - Phase 1

Harry C. Dommett

In the year 1791, Nailsea was described by Rev John Collinson as:

'situated to the west of Flax Bourton, and to the south-west from Wraxall in a deep and miry country, in some parts (particularly that called Naylsea Heath which has the appearance of a disused and neglected forest) thickly tufted with timber trees, holly and common brew. The soil abounds with coal of which there were four pits within the precincts of this parish, the coal is of that sort which burns into white ash, and being quick of kindling affords excellent fuel.

A manufacture of Crown plate glass has lately been established here by John Robert Lucas of Bristol at which a great number of names are employed, and a range of houses forming it were a small colony erected for the habitation of the workmen and their families'.

In 1795, John Billingsley, the entrepreneur and agricultural writer was a little more explicit:

'Under this level we supposed to be an inexhaustable veins of coal. At present they landed 2,500 bushels per day. The best coal is sold at three-pence half-penny, the middle sort at three-pence. and the small at two-pence per bushel. One of the works is under contract to serve the glasshouses some time since created in the parish of Nailsea at one-penny farthing per bushel.

The glasshouses consume about 2, 000 bushels weekly. The deepest work is forty-two fathoms. The principal vein is five feet thick; sometimes more. The coal takes a south 'pitch' or inclination never exceeding two feet in a fathom. Little timber is used, but they are much incommoded with water for the rock which lies above the coal so abounds with fissures that it is difficult to prevent the land water from pervading the bottom of the works.

When the top veins are exhausted, and the proprietors compelled to go deeper, it is a matter of doubt whether any power of a steam-engine may be competent to the task of keeping them dry'.

Billingsley's view was indeed prophetic for flooding bedevilled the mines throughout the working life of the Nailsea coalfield. The most powerful nineteenth century steam engines failed to conquer the problem and from the mouth of a contemporary, 'late nineteenth century miners worked in wet areas and dry areas, the wet only in summer'

These descriptions merely offer a glimpse of Nailsea at this time but in fact the area has a long and fascinating industrial history.

The Early Days

During the Romano-British period a large estate com-

plex was centred at Gatcombe Farm, a location between the villages of Flax Bourton and Long Ashton; a villa at a site in Wraxall was also linked with this complex. Archaeologists confirmed the use of coal in the complex but formed the opinion it was mined in the Radstock-Midsomer Norton area. However, seams of coal are known to surface near the villa so it is possible that coal hewn in the area was also used in the complex.

Certainly, evidence exists for coalmining in the seventeenth century. In the title deeds of Mizzymead, a house later occupied by the Nailsea Glassworks founder John Robert Lucas, there is a reference to a transfer dated 31 May 1656 concerning:

'John Doughting of Clapton in the County of Somerset Yeoman and Coalminen heir of Thomas Doughting late of Nailsea ..'.

The possibility exists that John, having experienced mining in Nailsea, then opened the Clapton mines in order to use the Avon river to transport coal for the Bristol market. There is evidence of Clapton coal being transported to Nailsea for use in the Poor House, yet the closure of these mines is shrouded in mystery. Certainly they closed before 1811 for geologist William Smith reported to the Bristol and Taunton Canal Company:

'A colliery was some years ago worked at Clapton near the church by virtue of a level which was brought up from the low grounds. The last pit upon the level head was, I heard, nearly 40 fathoms deep, and the main vein which I left was full six feet in thickness'.

The mines were working in 1797; confirmed by a report of '240 bushels landed daily from the pits at Clapton, best 3d. a bushel, smallest shipped at Portishead for Wales and used for lime burning'.

The closure of the mines at Clapton may be due to its geographical position relative to Nailsea. Before Nailsea's industrialisation, the capacity of Nailsea and Clapton together could easily satisfy local demands plus a little for export to Bristol and South Wales. With the opening of the Nailsea glassworks and the development of company mines, Clapton was placed at a disadvantage. Between the Clapton mines and the glassworks lay the Failand Ridge, only negotiable by pack horses. John Billingsley underlined the problem of such transportation in describing the advantages offered by turnpike roads:

'before the turnpike roads were established, coal was carried on horses backs to the distance of 15-20 miles from the collieries, each horse carried about 2cwt. Now, one horse with a light cart will draw 10cwt. or four times more than the horse could carry'.

The Wraxall Mine

From the mid-thirteenth century until the eighteenth century, Wraxall was a manor held by the DeGorges family. A descendant, Sir Hemy Calley of Wroughton, near Swin-

don, deposited on loan the family papers to the Wiltshire County Council Record Office for safekeeping. Amongst the papers is a document which provides a fascinating insight into mining technology:

'Articles of agreement as made and agreed by and between John Bryant of Portbury in the County of Somerset, Millwright and William Wynter of Wraxall, Gent. John Godwin of Nailsea, Yeoman and Thomas Mudge of Nailsea, aforesaid Coleminer; all in the County of Somerset, 3rd day of December 1700. As followeth, that is to say -

Imprimis

The said John Bryant by Gods permission undertakes to entertain and furnish an engine for got with ye winde in manner as a windmill in ye Parkeсталles, the south parke of Wraxall to draw water out of the pitt now begunne there. The like of Primus from the depth of Eleveeren [eleven] fathoms that shall carry off a shoot of water to fill in a bow of Sir Jeffry Diametru. The said Engine shall begin to work and carry off the whole shoot water belonging to the coalworks, as the coalworks shall from time to time wrought by the 28th day of February.

Item

The said John Bryant is to finde all materiall of timber, lime and iron work. And all the matters of pump, and other necessaries for the housing of the said Engine. And to bring it all in whatever estimate the timber is with permission of Edward Gorges Esquire [is given]. The said Edward Gorges Esquire is to bring to place at his own charge.

[The following paragraphs are unclear. The document continues]

They, the said William Wynter; John Godwin and Thomas Mudge to have no willful drainage to it. And John at the roll [or start] of ye etione of caverne [at the entrance of the cavern] here with ye engine, but Edward Gorges esquire of his assize in hours or any days before mentioned or intending.

Then the William Wynter, John Godwin, and Thomas Mudge in consideration of ye engine so hath said, in hand to the said John Bryant 21/6, and will pay 15£ more to him the said John Bryant as he shall have arransion [arrangement] of it for buying timber; and materially for ye same. And the sum of twenty and five pounds more when the engine so far undertaken aforesaid shall be lately finished to the work according to the commission of this the same John Bryant in full of 41£ and 1 shilling will also put unto the said John Bryant by four quarterly payments during the said abode of Sir Edward hereto into consideration whereas here the said John Bryant doth hereby undertake and commission to forty-three years of the said engine, if not this so, John Bryant as should soo longe.

Signed, sealed and delivered, the said being first staund according to the law in ye third year of Elizabeth.

*Robert Baker
William Godwin
Louis Donny*

Eighteenth Century Mining Development

By 1793 the evolution of company mining on the Nailsea Heath prompted the Lord of the Manor of Wraxall, Sir Charles Bamfylde to order the preparation of a map (Fig. 1). On the map, the Goddins, the Wedmore and the Young's pits were those of yeoman miners; the Engine and Lucas Pits were newly sunk company pits; the remainder being a number of abandoned outcrop mines and at the time of preparation only one of this type remaining in operation. The Wedmores and Youngs were long-established Nailsea families and the name Godden is thought to have been a corruption of Godwin, another old local family, a representative of whom was associated with the 1700 Wraxall mine. Even the Engine and Lucas Pits had their origin rooted in the same tradition, the White family having supplied coal to the Parish in 1763.

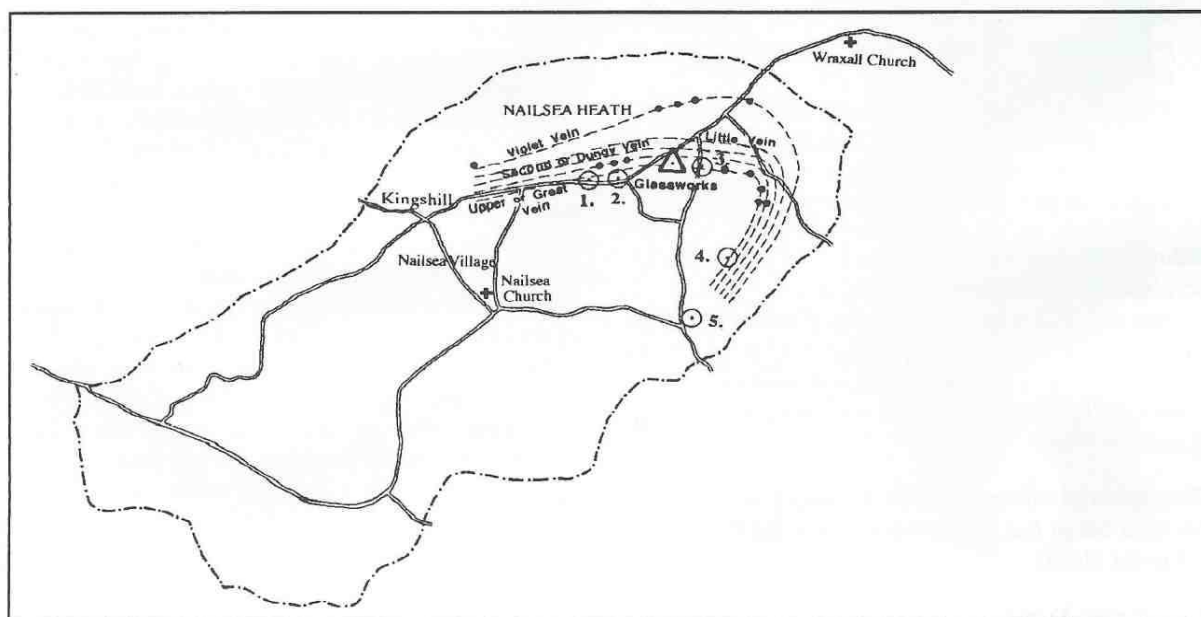


Fig. 1. Sketch map of Nailsea and Wraxall mining, based on Coal land of Sir Charles Bamfylde, 1790-1794.

The map shows that three veins were being worked: the Violet, the Dungy and the Upper or Great Vein. It appears the longer-established workings originated in the Wraxall district and later extended to the Nailsea Heath, close to the Wraxall boundary. Within the Wraxall boundary there were six abandoned workings, one on the Dungy vein and four, including the 1700 Wraxall mine, on the Upper or Great Vein, only one worked the Violet vein. On the Nailsea Heath three old Workings are shown close to the Wraxall boundary, almost adjacent to the site of the Roman villa, all having worked the Violet vein. The only outcrop mine still working was near the village boundary at Kingshill.

The two new pits located close to the junction of the Clevedon Road with the line of the pre-development Silver Street (now covered by shopping development) worked the 'Great Vein'. Between the two and the glassworks were two more abandoned workings, both having mined the same vein.

A New Look at an Old Industry

In an 1811 report to the Bristol and Taunton Canal Company William Smith traced ten seams and illustrated them as a series of dotted lines based on a line traversing the valley north to south, marginally west of the village and the Nailsea Holy Trinity Church and pointing into the narrowing valley (Fig. 2). Indeed, during the high peak of nineteenth-century industry it would have been possible to follow the run of the seams north, east and south by the location of pit heads.

It is possible to visualise the lie of the seams as a gigantic 'meat dish' sunk in the ground, nearing the surface north, east and south in the valley, but at its deepest below the church. Until world war two, Nailsea village retained its nineteenth-century outline stretching from the isolated enclosed village of the late eighteenth century along the road joining the village to the glassworks, literally above the run of the seams. The point at which the seams bent

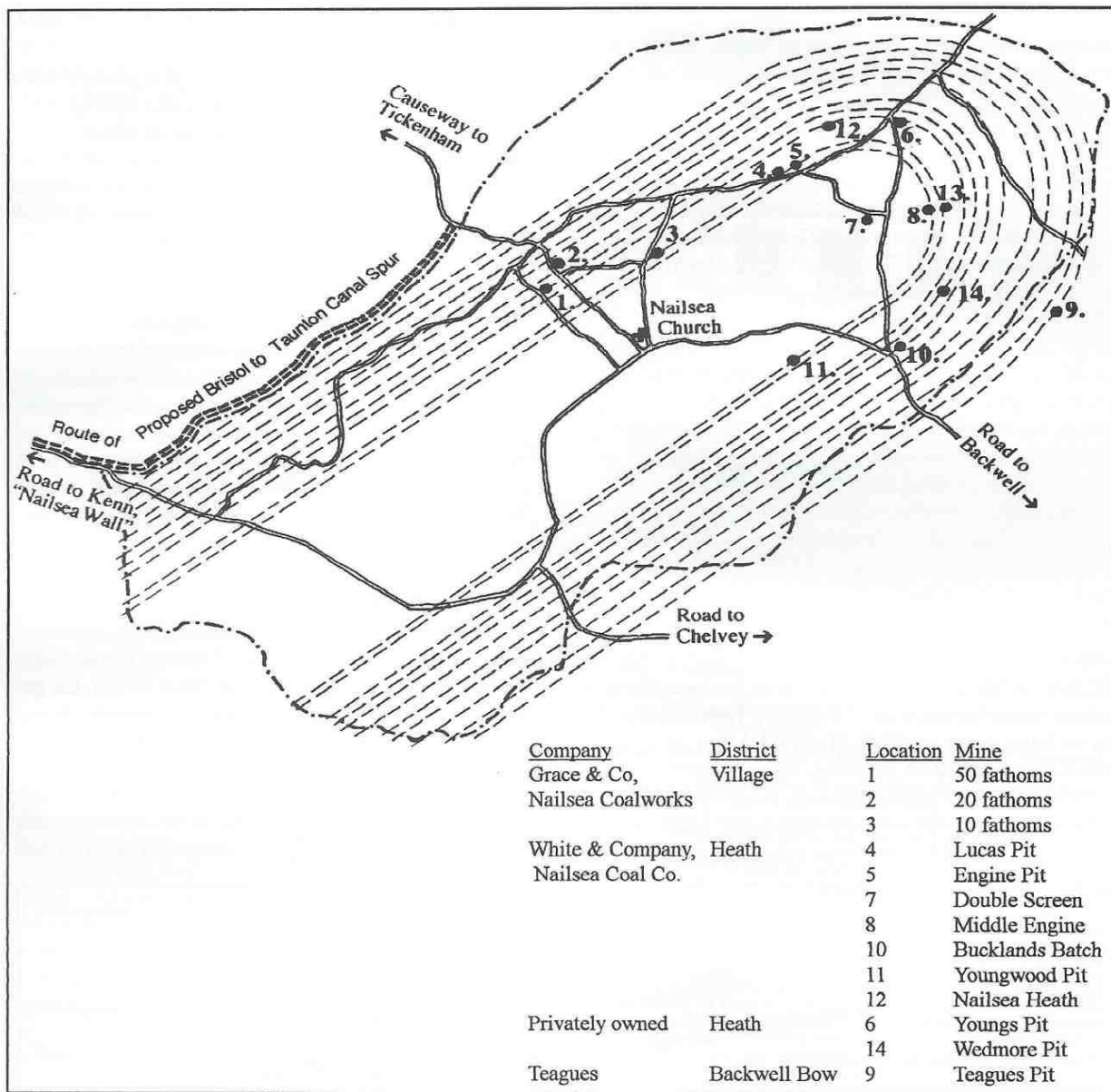


Fig. 2. Sketch Map of Nailsea 1780-1843, showing roads, mines and approximate run of seams

away from the glass-working area marks the limit of nineteenth-century village development. Only at the turn of the century were buildings constructed between the village and the railway station.

At this juncture it is well to examine the problems facing the early mining engineers. Pennant stone was not the easiest material to mine. It was hard and fissured, the fissures draining water from the surface into the workings and as a roofing material the stone tended to break into slabs, as a result of which the mines were well tubbed, a cladding technique described by Neil Cossons as: 'consisting of wooden planks arranged like the staves of a barrel or tub'.

Death stalked the mines. A young miner protégé of Hannah More, John Haskins, was seriously injured and eventually died as a result of a roof fall and his colleague, Tommy Jones, also concerned with the Hannah More School, suffered injury whilst a man working beside him at the time was killed outright.

Village politics also played a part in Nailsea mining history. The village community bitterly resented industrial development on Nailsea Heath on which they had rights of common. James White the founder of the Nailsea coal mining dynasty was a Nailsea man and at first his yeoman/miner operations were acceptable. However, the establishment of a Nailsea coal company and a glassworks on the Heath was an entirely different matter. A vestry proclamation of April 1789 states: 'that the inclosures on Nailsea Heath all pulled down or gone over'.]

During the first decade of the nineteenth century it is possible to detect a new atmosphere. The fact that the mines and glassworks on the Heath were profitable appears to have prompted the village to encourage mining within the village boundary, hence the foundation of the 'Grace' Nailsea mining company. The operation of this mining company, modest at first, later depended on their efforts to persuade the Bristol and Taunton Canal Company to provide a canal extension to Nailsea and Morgans Creek.

The Nailsea Coalworks of Davis Thomas and Grace

The first mention of this colliery is to be found in the Nailsea Vestry Minutes of 27 February 1804 in connection with the repair of North Street Lane and on 2 April 1804 it was reported:

'John Grace and John Thomas on behalf of the Nailsea Coal Company attended the Vestry and agreed to the resolution provided the stones were hauled in the lane

from the North End of the said lane to the coalpit, two passing places and proper draining to be made on the said lane'.

From a report prepared by J. Laws in 1854 it is confirmed the mines were sunk by Davis Thomas. In 1859, Josiah Grace confirmed that Davis Thomas and Grace originally worked a small colliery at Nailsea. He wrote:

'In the year 1809 a Canal was projected from Taunton to Bristol with a short branch to Davis Thomas and Grace. No doubt a relative to Davis Thomas, one John Thomas, was a great promoter of the undertaking. A Canal Company was formed and they employed their own Engineers and Coal Viewers to report upon the Nailsea Coalfields, the result of which was favourable showing that the Canal Company would receive large returns from this source. An Act of Parliament was obtained and preliminary arrangements were made for commencing the undertaking when one of the commercial panics recurred which prevented its progress .. '.

Josiah continued:

'Davis Thomas and Grace continued to push forward their new works and sank two pits at a cost of many thousand pounds through rock the whole distance until they reached the first seam of Coal upon which they worked for about fifteen months perfectly satisfied with the size of the seam of coal and its quality which gave general satisfaction to the consumers'.

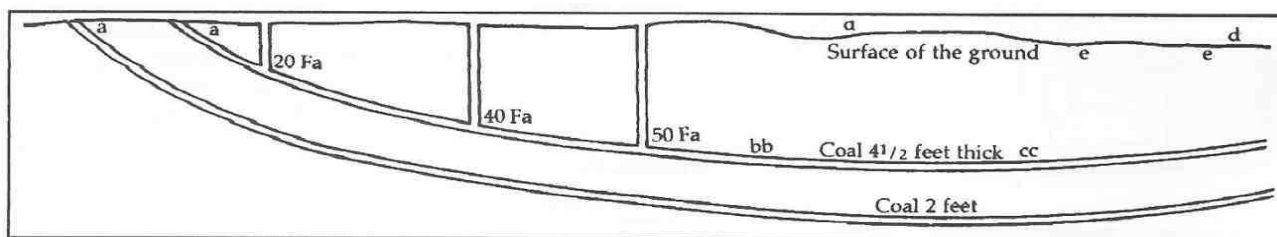
Laws, in his report to Josiah Grace, explained:

'that this Canal should have been executed there seems to have been every expectation being a branch of an intended one from Bristol to Taunton in which Mr Thomas had considerable interest and sufficient influence to have been inserted in the Act power for making the branch up to his Colliery upon the faith of which the pits were commenced and sunk. Indeed there is every reason for all concerned in the undertakings to be confident'.

The Canal Company

As indicated above, the Nailsea industry had expanded to such an extent the Bristol and Taunton Canal Company were moved to commission William Smith, the geologist, and Edward Martin, a colliery surveyor, to express an opinion on its feasibility with terms of reference:

'whether the coalfield around Nailsea across which their line of canal is to pass was likely to furnish such a supply of coals as by the tonnage on them to pay



Messrs Grace & Co's Nailsea Colliery

(Philosophical Magazine 38 (1811))

interest to the proprietors ... for the expense of executing this part of their line about eight miles in length from the River Avon at Morgans Pill near Bristol, with a branch to the eastward of about two miles in length to the Nailsea Collieries'.

Their calculations were impressive:

'There are ten veins or seams of coal already discovered within their limestone basin, which added together make 26 feet of solid coal. These ten veins worked in the usual way will yield 30,000 tons of coal per acre, but [as] some of them being under two feet I will only calculate upon 20,000 tons per acre and on working 400 tons per day, and on 300 working days in the year

Consequently 400 tons multiplied by 300 days make 120,000 tons per annum. And again I will only estimate upon 100 acres containing upon an average the whole of the ten veins though I have no doubt but there are two or three thousand acres. Therefore 1000 acres multiplied by 20,000 tons per acre give 20,000,000 tons and divided by 120,000 tons per annum give 166 years which is the length of time the colliery would last at 120,000 tons per annum.

The distance from Morgans Pill to Nailsea Collieries I understand is ten miles and the tonnage authorised to be received by the act for making the Canal is 2d. per ton per mile; so that every ton is 20 pence which on 400 tons per day, and on 300 days in the year accounts to 10,000£ per annum being equal to 10 per cent upon a capital of one hundred thousand pounds per annum. This is about the sum the estimate is made for; but from what I observe of the line of the canal it is all good ground, and easy cutting except the Tunnel and I think the whole ten miles should be completed from 7,000£ to 8,000£'.

Smith and Martin confirmed that the mine-owners reaction to the canal scheme was favourable:

'All the Nailsea Colliers were much interested in promoting the canal scheme, that is to say, in getting the canal brought from Morgans Pill to the vicinity of their works for till that is done their sales of coals are small, that the moneys arising from what is sold to the country will hardly pay for carrying the works on'.

The report was well prepared and presented to the Canal Board for consideration, as a result of which in 1812 an act was passed:

'... for making a Navigable Canal from the River Avon at or near Morgans Pill in the parish of East-in-Gordano otherwise St. Georges in the County of Somerset to or near the River Tone in the parish of St. James in Taunton in the said county, and a certain Navigable therein containing'.

The plan for the canal was quite impressive for the spur would have been rooted in Kenn Village and run parallel to the Nailsea Wall, skirting the 'island' from the west towards the north. For this purpose a continuous strip of

land 66 ft wide was purchased to contain the canal narrowing to 33 ft for about 600 yd, an area reserved as a railhead for the transportation of coal from the vicinity of the glassworks serving the White's group of mines, and another area serving the Grace group of mines, coal presumably transported to the canal by cartage. It is not known what form of locomotion was planned for the railway.

Mounting Problems

According to the Smith/Martin report, the number of Grace mines working was three, one at 20 fathoms thought to have been located at North Road, another at 40 fathoms located on Back Lane, now known as Whitesfield Road, and the third at 50 fathoms named the Engine Pit, which probably gave its name to the present day Engine Lane.

The report noted that the 50 fathoms pit offered the greatest number of problems but Laws' report of 1854 was more explicit as to the nature of the problems:

'The coal was reached at a depth of from 50 to 60 Fathoms, and after being worked 16 or 18 months during which time 30,000 tons may have been excavated, an additional quantity of water came off at a fault met with in the Coal drifts which was proved to come from the old working of the former pits as the water in them was observed to be lowered as long as the Engine power employed was sufficient to overcome and pump the quantity that was now released and brought to it.

This, however; would appear not to have been of long duration for the result was at an early period, the Beam of the engine one of 70 HP was broken, most probably from being overtaxed in overcoming the increased quantity of water; and by which the Pits were consequently soon filled'.

As if fascinated by the phenomenon, the Smith/Martin report stated:

'It has been observed in the neighbourhood that the water in some of the Wells have been drained off at times when the water in the 50 Fathom Pit was quite out, and that when an accident happened to the engine so as to occasion the water of the colliery to rise a considerable height in the pit, the wells are also filled again.

Josiah Grace mentions in his history that a 'commercial panic' prevented the progress of the canal; certainly, an Act of 1813 to provide the canal was repealed by another Act of 1824 to release the land reserved for the canal sale.

Clearly the Grace Company had gambled on the provision of the canal, and the longer this was delayed, the greater became their problems. Josiah explained:

'From the large outlay it was necessary that a large quantity of coal should be raised to make it a paying concern, this course was adopted, but the then mode of conveyance being by the ordinary roads it was found that the demand of the neighbourhood was not sufficiently great to take off the quantity raised. The Bris-

tol market was tried with the surplus quantity where the quality was approved, and it met a free sale, but the cost of transit was so great that this market was ultimately abandoned'.

One report indicated closure was in 1825, significantly a year after the repeal of the Act to provide the canal. It is possible the Teagues Colliery on the Backwell Bow ceased trading for the same reason.

The Teagues Colliery

Situated on Backwell Common, Teagues Colliery was described by the Smith/Martin report as follows:

'The veins are of sufficient thickness to produce a great quantity of coal without going over much ground There are also a sufficient number of veins lying one beneath another within a moderate depth from the surface so as not to require the too frequent repetition of the great expense of new pits and machinery. The veins are also so moderately inclined, as to be for a long period of years within the reach of such shafts as may be sunk by the help of steam engines which, from the small quantity of water in a great extent of coal already working, have not yet been found necessary.

As the sinkings through the strata lying over these veins of coal are all soft and mostly impervious to water; it may be reasonably expected that the veins which lie under these will have still less water. The surface of the land, to a great extent around these collieries at Backwell Common is a tenacious clay, quite unabsorbent, and altogether unlike the land at Nailsea; and although the veins are thinner; there are more of them, and the coal is of a harder and better quality. The disadvantages which these works have experienced from the quantity of timber required will lessen with the depth to which the veins are worked, and the expense of procuring such timber will be lessened by making the canal. Although these veins of coal have been worked for a long time, the works have been carried on in such a small way, as not materially to have reduced the quantity of coal, or to render the working of the deep coal anywise dangerous, from water contained in the old hollows. The whole of the water between the pits and the outcrops is known, and daily exhausted, without the aid of pumps, and, in fact, all the coal that has ever been worked out of

these veins has been merely along the outcrops, and instead of exhausting the veins, or of rendering the deep works dangerous they have much satisfactorily proved the great extent to which such works may be carried'.

The report also included details of the thickness of the Seams:

'As to Backwell Colliery, the property of Mr. Teague, partly his own estate and partly that of the Marquis of Bath, the thickness are as follows, viz.

<i>1st Vein (of Smith's coal)</i>	<i>2½ feet</i>
<i>2nd Vein</i>	<i>3 feet</i>
<i>3rd Vein</i>	<i>1½ feet</i>
<i>4th Vein</i>	<i>3 feet</i>
<i>5th Vein</i>	<i>2 feet</i>
	<i>12 feet</i>

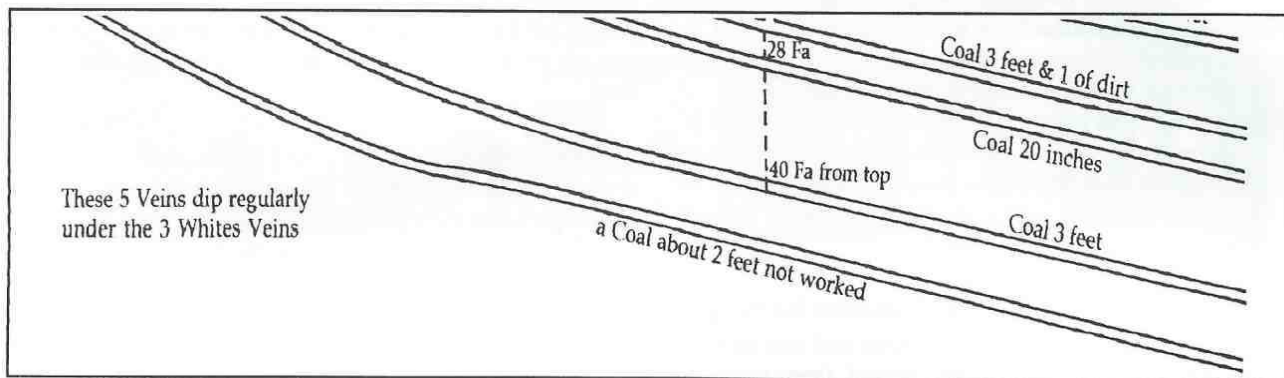
Despite the optimism of this report, there is little doubt it suffered the same fate as the Grace Company's mines, being closed by the problems in transporting coal to the consumers. Yet the White's Group survived both canal speculation and transportation problems.

The Nailsea Coal Company

The White family involvement in Nailsea coal-mining dates at least from 1775 in which Nailsea churchwardens record the purchase of coal from John White. It seems John died shortly after this date. It is likely the Nailsea Coal Company was formed between the years 1775 and 1779 for significantly Isaac White, Dr Joseph Whitchurch and Peter Cox, a gentleman of Wrington, were founding partners of the Company.

Felix Farley's Bristol Journal, of 23 August 1787 states: 'The New Coal Works on Nailsea Heath, 9 miles from Bristol, are anxious to confirm their friends, and the Public that their works have been for some time completed, and that there will be a constant supply of coals of a vastly superior quality to any in that part of the County, and inferior to none presented to be well free from any sulphurous smell which they will render in the following prices (per bushel great measure):

Brush Coal with large at	..	3d.
Smith's Coal with large at	..	5d.
Calic called Coke at	..	3d.
Brush Coal at	..	2½d.
Limekiln Coal at	..	1½d.



Teague's Backwell Colliery

(Philosophical Magazine 38 (1811))

John Robert Lucas, the glassworks owner, was not then a member of the company. His membership dates from 7 April 1788, as the Article of Agreement shows:

'that in consideration of 210£ to the said Whitchurch, Cox and White paid by the said Lucas, the said Whitchurch Cox and White did severally promise, and agree to and with each other with the consent of the said Sir Charles Bampfylde to be and continue co-partner in Joint Trade and dealer in the business of Coal Merchant'.

There is little doubt that Isaac White was responsible for the agreement. In various documents he is described as a yeoman coal miner and, significantly, cooper. This probably explains the link with John Robert Lucas, who at the age of twenty-one had inherited his father's cooper's business before developing his interest in glass-making. In 1788 he sold the wine and cider business, presumably to invest in his Nailsea interests. Of course, what discussions occurred between Isaac White and J.R. Lucas are not known, but Lucas sank a pit specifically for coaling his glassworks before the sinking of White's Engine Pit and he would hardly have done so as a coal company partner. After the agreement the mines were amalgamated as indicated in the diagram of the operation prepared by Smith and Martin.

Isaac died in 1797 and named James Coombs as his executor *'to use money for the maintenance of his four children, James, Hester who died an infant, Isaac and William'*. James and Isaac later played a significant part in the mining operations.

Throughout the next 20 years a series of documents covered changes of partnership, for by 1817 all the original members of the partnership had died and been replaced by members of the same families.

On the 1 April 1807 an agreement was signed of great importance to the maintenance of a mining industry in Nailsea. For the next 30 years The Nailsea Coal Company agreed

to supply coal for the use of the glassworks 'Lucas, Chance, Homer and Coathupe' with all so much good saleable and marketable small coal and brush and

large coal as may be necessary for the use and consumption in carrying on the said trade and business of glass manufacture at Nailsea aforesaid. '

It takes little imagination to understand the impact of such an agreement on the Grace group of mines and explains why John Thomas was so active in promoting the extension of the Bristol-Taunton Canal to Nailsea. In effect the agreement meant that the supply of coal to the most important customer in the area, the Nailsea Glassworks, was almost exclusively the right of the White's Nailsea Coal Company.

By the time of the Smith/Martin report, the White's company did not oppose the extension of the canal to Nailsea, but considered it another useful outlet, hence Smith and Martin gained only a limited knowledge of the White's operations, viz:

'three pits working, one at 20 Fathoms, one to 35 Fathoms, another in the process of being sunk to 60 or 65 Fathoms'.

It is thought the three pits could be the 1797 Engine Pit, the Middle Engine Pit and the Bucklands Pit, possibly once named the Goddins Pit and in the process of redevelopment.

Three veins were worked at this time.

Kings Hill Vein ..	2 ft
Main Vein ..	3½ ft
Dungy Vein ..	2 ft
Total 7½ ft	

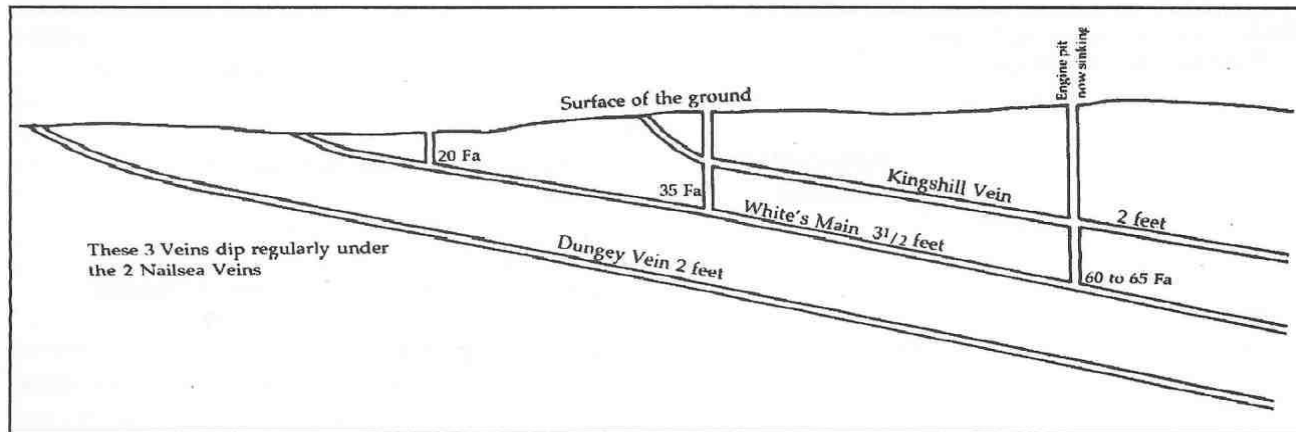
In the same year Felix Farleys Bristol Journal of December 1811 reported:

'White and Company respectfully inform their friends and the public that they have several hundred tons already landed of best large coal which they are selling at 5d. per bushel'.

James White and the Nailsea Coal Company

The Company did not lack in enterprise, indeed between 1811 and 1842, nine land leases for the mining of coals under Nailsea were negotiated. Later, when the canal venture failed to materialise, the Nailsea Coal Company was cushioned by the agreement with the glassworks.

Nevertheless, they too would have been disappointed by the turn of events. It may be recalled that in 1797 Isaac White died and named John Coombes as his executor to



White's Colliery

(Philosophical Magazine 38 (1811))

use money for the maintenance of his children, naming James White as the eldest of four. On the 1st January 1816 James became the company's manager and superintendent and the articles of partnership provided particular information on the question of remuneration.

Obviously, whilst the glassworks existed, the White's mines were reasonably safe and changed little after the death of J.R. Lucas in 1828. The glassworks shares were left to his grandsons, and his executors formed a partnership with three Coathupes, J.E. Homer and Thomas Clift. Thanks to the Coathupes notes there is confirmation that the glassworks used Nailsea coal for their furnaces, and beyond 1836 into the 1840s, paid the same price for their coal as in 1807.

It seems the arrangement continued until the year 1842 when a notice appeared in the London Gazette of Tuesday 14 February 1843:

'Notice is hereby given that the partnership carried on by us the undersigned Reginald Henry Bean, Leonard Whitchurch, John Baker and James Fitchew Cox of Nailsea in the county of Somerset Coal Miners under the firm of White and Nailsea Coal Company was dissolved by mutual consent on the 22nd of August, last..'

The existing equipment was valued and this document provided a superb listing of the mining equipment used in the first phase of Nailsea mining operations:

No.1 Old Engine Pit

Pumping Engine and cylinder 60" diameter; 10 feet stroke, air pump and condenser with three boilers, viz.

One wagon boiler 18feet long by 9feet wide.

One Cornish boiler 36 feet long being 15feet 6 inches diameter with 6 " tubes.

One haystack boiler 13 feet diameter with drawing frame and fire bars complete.

Engine House included about 1¼ acres of land, 60 fathoms of 14 " pump with working barrel, clack seat strapping, tail joint dagger; bucket and clack complete in two lifts.

*Valued
£1,700*

No.2

Winding Engine with cylinder 21" diameter 4 foot 6 inch stroke, air pump and condenser with wagon boiler, 20 feet long, 5 feet wide, including appropriate shears and pulley wheel and rope, complete engine house.

Valued £ 717

One horse drum, 12 feet diameter with two ropes, 140 fathoms long, 1½ inches diameter; two crane and pulley wheels complete, 1 wheelhouse, two coal sheds, counting house and two screens.

Valued £1, 850

One wheel house, two coalsheds, counting house and 2 screens £100
One weighing machine with office £80
One carpenter shop £50
One stable rack and manger; and chaff machine £5
One smithy, two pairs of bellows and 2 anvils £42 10s.
One mandrill 12½ " diameter, 5 feet long £14
One store house with store of brass and iron £50
Tools of every description £20
Two counting houses with two iron depositories and one dwelling house
One lathe shed £200

No.3

Engine two horse power for driving lathe and connected with boiler 6 feet long 2½ feet diameter £100

One lathe 10 inches headstock with driving gear; complete with engine £80

Has including:

One small lathe with tools £10

Vice and bench with sundries £11

Old wrought and cast iron about 20 tons £50

Wagon £30

Three Carts £30

Six Horses £70

1,000 yards of railway plate underground £100

Note

Numbers one to three are thought to have been equipment housed at the 1787 pit, the first in the White's group of mines. The area of 1¼ acres appears to account for only a section of the complex, thus No.1, No.2 and No.3 could well have covered a larger area. Significantly, No.3 used as a lathe shop accounted for 1,000 yards of railway plate underground, apparently unused, so could have been the site of the first Lucas mine.

No.4 Middle Engine Pit

Pumping Engine with open top cylinder 45" diameter; 8 foot stroke with air pump and condenser

One haystack boiler; 15 feet diameter, 36 fathoms, 12" pump with working barrel clack seat, rope strapping. Tail Jointwagon bucket and clacks complete

£800

(Engine House not included being leasehold)

No.5

Winding Engine with cylinder 18" diameter, 3 '6" stroke.

One haystack boiler; 10 foot diameter with winding apparatus shearer and pulley wheel complete £500
(Engine house not included, being leasehold)

No.6 Golden Valley

Pumping Engine being close top cylinder: 50" diameter; 8 foot stroke with air pump and condenser; two high pressure boilers 25 foot long 5½ foot diameter

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108 Fathom pump, 80 Fathoms of 10" and 28 fathoms 18" with working barrels, clack seats, rods strapping, rail joints.

Buckets and clacks complete £1,400
 Engine House not included, being leasehold.

No.7

Winding engine with cylinder 22" diameter; 5 foot stroke air pump, condenser; winding apparatus. Shear pulley wheels and rope complete.
 Engine House not included being leasehold

No.8 Youngwood Pit

Pumping Engine, Close Top Cylinder; 44" Diameter £850
 8 Foot stroke with air pump, condenser; and Hay Stack boiler 13 feet diameter.
 30 Fathoms of 14" with working barrel, clack seam rods tail joint,
 Dagger; Bucket and clacks complete
 Engine House not included being leasehold.

No.9

Engine, high pressure with cylinder 15 " diameter £300
 3 foot stroke with two boilers and winding apparatus complete.
 One capstan rope, shear and pulley wheel, 40 Fathoms £200
 and spare sheaves
 one horse drum with ropes, cranes and wheels.

No.10

Winding engine with cylinder 24 " diameter; 4 '6 " stroke Air pump and Condenser; Hay Stack Boiler 14' diameter with winding apparatus shears and pulley wheel complete £734
 (Engine House not included, being leasehold)
 One Horse drum with cranes, pulley wheels and ropes £27
 5 Coal Hutche £27 10s.

No.11 Nailsea Heath Pit

Atmospheric pumping engine with cylinder 3' diameter 7'6" stroke
 Hay Stack Boiler 14' Diameter
 35' of 12" pump working
 Barrel Clack, seat rods strapping, Tail Joint Daggers
 Bucket and Clack Seating £405
 (Engine House not included being leasehold)
 30" Wreathing Hutches underground £7 10s.
 10 Wrought Iron Carriages £5
 15 Trams £70

Additional

Machine and expense sinking 30 Fathoms of Youngwood £1,800
 Pit in the year 1848
 Three cottages £300
 Three acres of arable land £300

Old Timber Yard ½ acre £50
 Total £12,706 9s. 9d.

The valuation of the three cottages and the three acres of land was considered high, and reduced by £325, the final evaluation being £12,381 9s. 9d.

Conclusion

The reason for the closure of the White group of mines is not difficult to determine. Whilst the glassworks enjoyed the benefit of cheap coal, mines tied to a fixed price contract were faced with the escalating maintenance costs of ageing equipment, so by 1843 the margin of profit was almost non-existent.

Members of the mining partnership Isaac White and Reginald H. Bean (son-in-law of the late Jolm Robert Lucas, founder of the glassworks) were also closely connected with glass-making management, hence were fully aware of the problems. The question facing both boards was how the mines could be modernised without cutting glassworks production.

The construction of the railway through the valley adjacent to Nailsea in 1841 was heaven-sent, as it opened a means whereby coal used in the glassworks could be imported from Bristol during a period in which Nailsea mines were modernised. It is also possible the Nailsea Coal Company seized the closure as a means of ending the fixed price contract and as soon as this was effective in law, a few pits may have been reopened. Going by the evidence of the valuation, especially the 1848 development of the Youngwood mine, final closure of all the mines was not being considered. On the contrary, the board was reconstituted at this time with the same family partnerships as agreed at the foundation of the original company. Unfortunately, this created an internal dispute that even baffled the minds of those who were closely connected contemporaries of the first board. What is clearly Phase I of Nailsea mining history officially ended on 22 December 1843.

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